

TA-F7/TA-F7B

UK Model
AEP Model

TA-F7: silver panel
TA-F7B: black panel



INTEGRATED STEREO AMPLIFIER

SPECIFICATIONS

GENERAL

Power Requirements:	220V, 50/60 Hz (AEP model) 240V, 50/60 Hz (UK model)	Frequency Response:	PHONO 1, 2 RIAA equalization curve ± 0.2 dB
Power Consumption:	400W (AEP model) 410W (UK model)	TUNER	$\{$ AUX 1, 2 $\}$ 5–100,000 Hz ± 0 dB
Dimensions:	Approx. 430 (w) x 170 (h) x 420 (d) mm 17 (w) x 6 3/4 (h) x 16 5/8 (d) inches Including projecting parts and controls	TAPE 1, 2	
Weight:	Approx. 20.3 kg, 44 lb 12 oz (net) Approx. 24.3 kg, 53 lb 9 oz (with shipping carton)	Tone Controls:	BASS ± 10 dB at 30 Hz (TURNOVER FREQ 150 Hz) ± 10 dB at 60 Hz (TURNOVER FREQ 300 Hz)
			TREBLE ± 10 dB at 20 kHz (TURNOVER FREQ 4 kHz) ± 10 dB at 40 kHz (TURNOVER FREQ 8 kHz)

PREAMPLIFIER SECTION

Harmonic Distortion:	Less than 0.015% at rated output (AEP model) Less than 0.015% at 1W (UK model)
IM Distortion:	Less than 0.015% at rated output (AEP model) Less than 0.015% at 1W (UK model)

Filters: LOW 12 dB/oct. below 30 Hz
HIGH 12 dB/oct. above 9 kHz

— Continued on next page —

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND  MARK ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS. PUBLISHED BY SONY.

SONY
SERVICE MANUAL

Inputs:

	Sensitivity	Impedance	Maximum Input Capability (THD 0.015% at 1kHz)	S/N (weighting network, input level)
PHONO 1	2.5 mV (-50 dB)	50 kΩ	250 mV (-10 dB)	75 dB (A, 2.5 mV)
PHONO 2				
TUNER AUX 1, 2 TAPE 1, 2	150 mV (-14.5 dB)	50 kΩ	—	95 dB (A, 150 mV)

Outputs:

	Output Level	Impedance
REC OUT 1,2	150 mV	10 kΩ
PRE OUTPUT	1 V	1.5 kΩ

POWER AMPLIFIER SECTION

Continuous RMS	
Power Output: (rated output)	Both channels driven simultaneously
	At 20–20,000 Hz
(Less than 0.015% harmonic distortion)	70 + 70W (8Ω)
	According to DIN 45500
	70 + 70W (8Ω)

Power Bandwidth: 5–40,000 Hz, IHF (8Ω, 0.015 THD)

Damping Factor: 60 (8Ω, 1 kHz)

Harmonic Distortion: Less than 0.015% at rated output
Less than 0.015% at 1W output

IM Distortion: (60 Hz:7 kHz = 4:1) Less than 0.015% at rated output
Less than 0.015% at 1W output

Frequency Response: dc-100,000 Hz ±1 dB (1W)

S/N Ratio: Greater than 110 dB, short-circuited input

Residual Noise: Less than 0.12 mV

Inputs: POWER INPUT
Sensitivity 1V (for rated output)
Impedance 100 kΩ

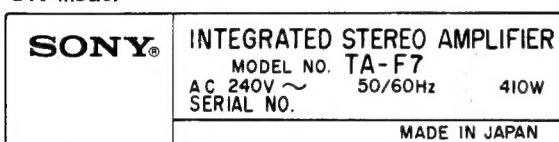
Outputs: SPEAKER A, B
Accept speakers of 8Ω or more
HEADPHONES
Accepts low- and high-impedance stereo headphones

0 dB = 0.775 V

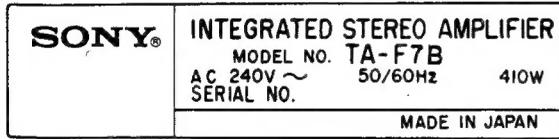
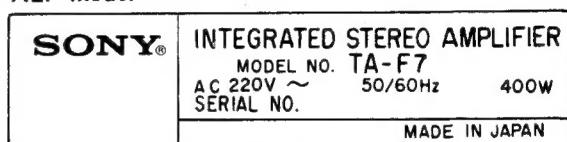
MODEL IDENTIFICATION

— Specification Label —

UK model



AEP model



SECTION 1 OUTLINE

1-1. CIRCUIT DESCRIPTION

1-1-1. Equalizing Amplifier

Refer to Fig. 1-1. The input signal from PHONO 1 or PHONO 2 goes to the gate G1 of the dual-FET differential amplifier Q101 and the feedback signal from the output goes to the gate G2. Q101 amplifies these two input signals, and its output signals at the drains D1 and D2 are in reversed phase. Q106 and D101 are the load of the differential amplifier and compose a current-mirror circuit. This current mirror makes the differential amplifier have more gain and less distortion by re-using the output current in other than the load of the differential amplifier and making it a load current. The output signal appeared in the drain D1 next goes to the base of Q107.

Q107 and Q108 compose a darlington circuit, and this circuit has a proper gain by having a constant-current source Q109. Q102 in the source return of the differential amplifier Q101 is a constant-current source and serves as an infinite impedance against the input signal to the differential amplifier. Transistor Q102 is used instead of a large resistor in this stage, because the dual FET Q101 is drawing a relatively large current from the limited B+ voltage to improve audio quality.

Q103 and Q104 compose a voltage regulator and the voltage V_0 , namely the base-bias of Q102, is maintained constant to make Q102 stable. The current I_1 which flows through the constant-current source Q102 is expressed as

$$I_T = \frac{V_0 - V_{BE1}}{R106}$$

where $V_0 = V_{BE2} + V_1$

V_1 is determined by I_0 which flows through $R112$ by V_{BE2}

So, I_1 is determined by V_{BE1} and V_{BE2} and is independent upon $B+$ and $B-$ voltages, namely I_1 is constant.

Furthermore, this equalizing amplifier is stabilized dc-current-wise by utilizing a dc feedback circuit of Q105 as well as the dependent feedback circuit to produce the RIAA deemphasis curve. Here, Q105 serves as a voltage follower and its dc gain G is determined as

$$G \doteq \frac{R_{110}}{R_{107}} \doteq 30 \text{ dB}$$

The lower-side cutoff frequency is determined by R116 and C107 in the gate circuit of Q105.

The RIAA curve to be used as a record amplifier is produced by the feedback components C105, C106, R108, R109, R120 and C109. And the output

signal is fed back to the gate G2 of Q101, thus making a voltage feedback loop.

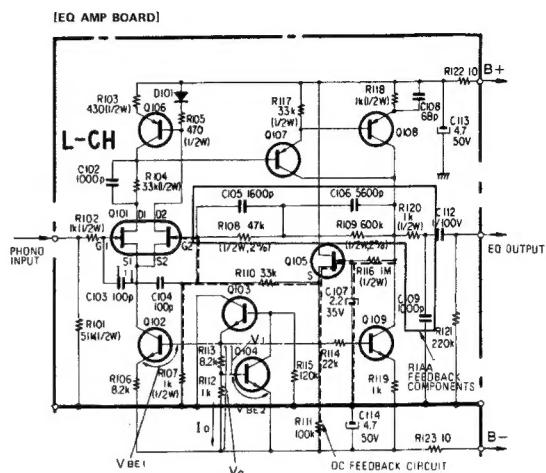


Fig. 1-1.

1-1-2. Power Amplifier

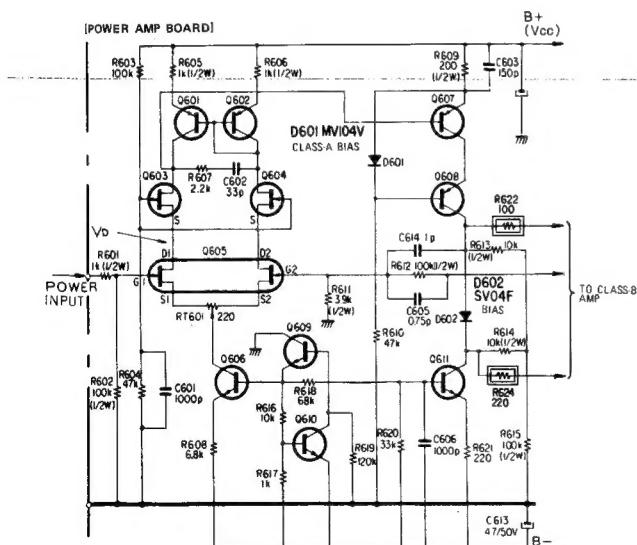
(1) Class-A Amplifier

Refer to Fig. 1-2 and Fig. 1-3. The output signal from the preamplifier section goes to the gate G1 of the dual-FET differential amplifier Q605. The output signal of the class-B amplifier is fed through a feedback route back to the other gate G2 of Q605. These two input signals are amplified in Q605 and mutually reversed-phase output signals are obtained at its drains D1 and D2. Q603, Q604 and Q605 are composing a cascaded differential amplifier, and Q601 and Q602 are its load. Q601 and Q602 also compose a current-mirror circuit and of a push-pull configuration. By utilizing this current-mirror circuit, two outputs are compounded resulting in a high amplification with less distortion.

Due to the high-gain operation of the first stage, Q603 and Q604 lock the drain voltage V_D of Q605 and shift the level, and thus reducing noise component produced by the drain current. The locked drain voltage V_D is expressed as

$$V_D = V_{CC} \times \frac{R_{604}}{R_{603} + R_{604}} \approx 15 \text{ V}$$

The output signal at the drain of Q603 next goes to the class-A cascaded amplifier composed of Q607 and Q608 which has a constant-current load Q611. And its output signal is next applied to and voltage amplified by the following class-B amplifier.



1-1-3. Power Supply

Refer to Fig. 1-4. This regulated power supply provides a power for the class-B amplifier. This voltage regulator uses a constant-current circuit Q706 in the base-bias circuit of the control transistors Q704 and Q705. And this voltage regulator provides a high input impedance, low output impedance and a good regulation against the fluctuation in the input voltage.

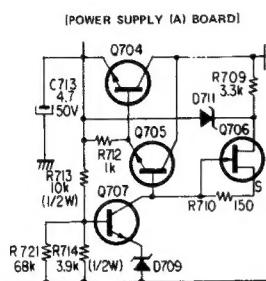


Fig. 1-4.

Fig. 1-5 shows the basic voltage-regulating circuit.

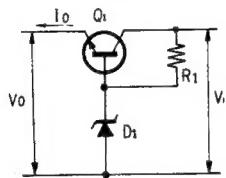


Fig. 1-5.

The voltage regulation factor is expressed as

$$\frac{\Delta V_o}{\Delta V_i} \approx \frac{Rd}{R1 + Rd}$$

where, ΔV_o = fluctuation of output voltage

ΔV_i = fluctuation of input voltage

Rd_1 = active resistance of D1

Accordingly, on a constant Rd_1 , the larger $R1$ the better a voltage regulation. In the circuit in Fig. 1-4, a good voltage regulation is obtained by utilizing an FET-type constant-current source and a large $R1$.

The output impedance of the circuit in Fig. 1-5 is expressed as

$$R_o \approx \frac{\Delta V_o}{\Delta I_o}$$

$$\approx \frac{Rb + Rd}{1 + h_{FE}}$$

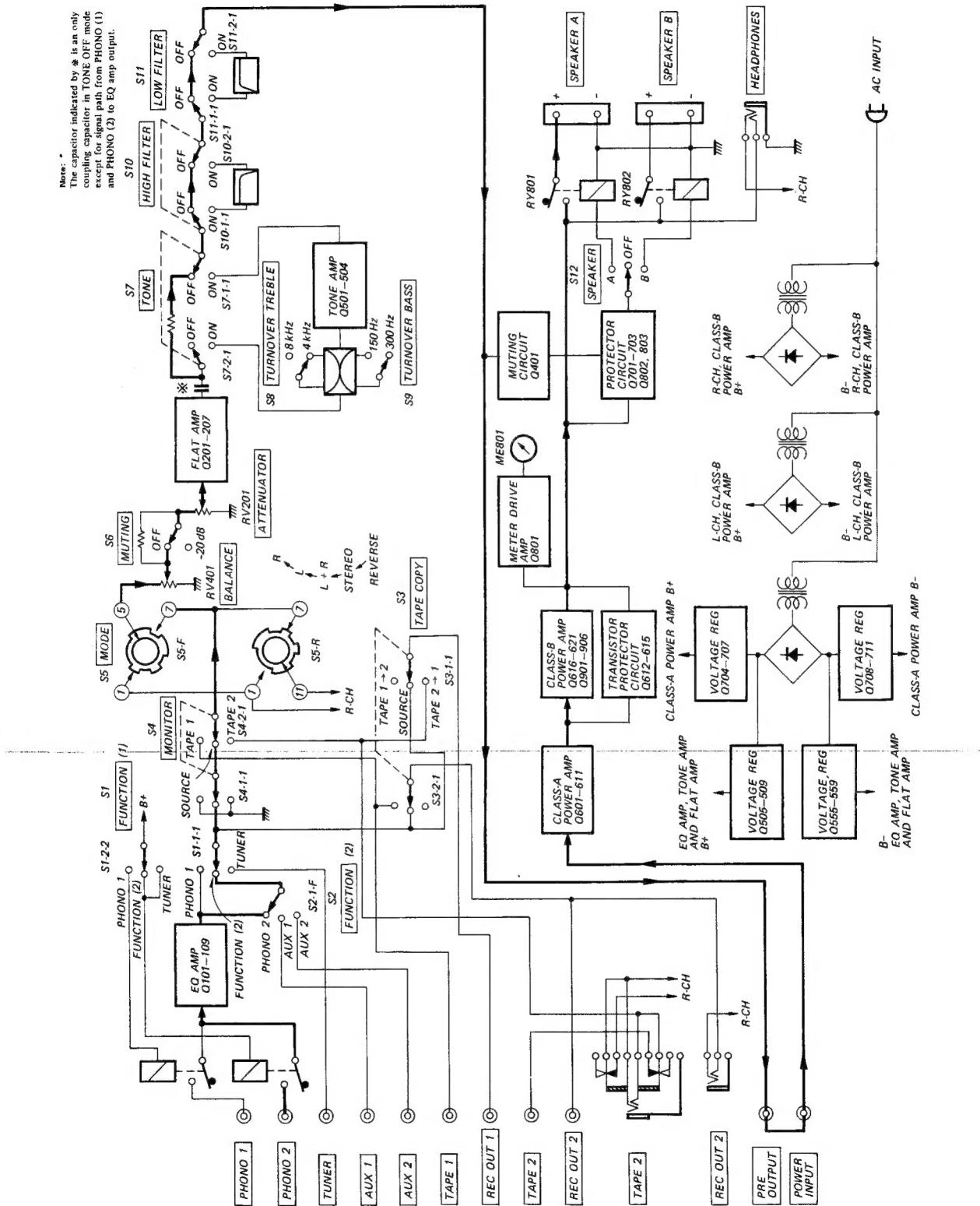
where, Rb = base resistance of Q1

h_{FE} = current amplification factor of Q1

Therefore, a low output impedance is obtainable with a transistor having a large h_{FE} . So in the actual circuit in Fig. 1-4, a darlington configuration is used in the place of Q1 in Fig. 1-5 together with a large resistance $R1$.

To obtain a good rejection factor against the ripple component, a bootstrap circuit composed of R709 and D711 is used.

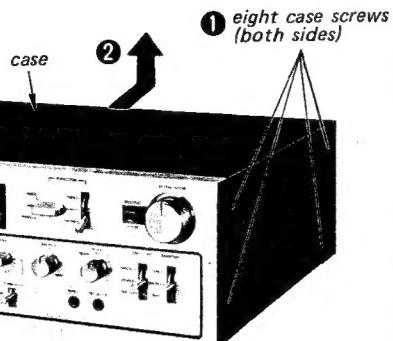
1-2. BLOCK DIAGRAM



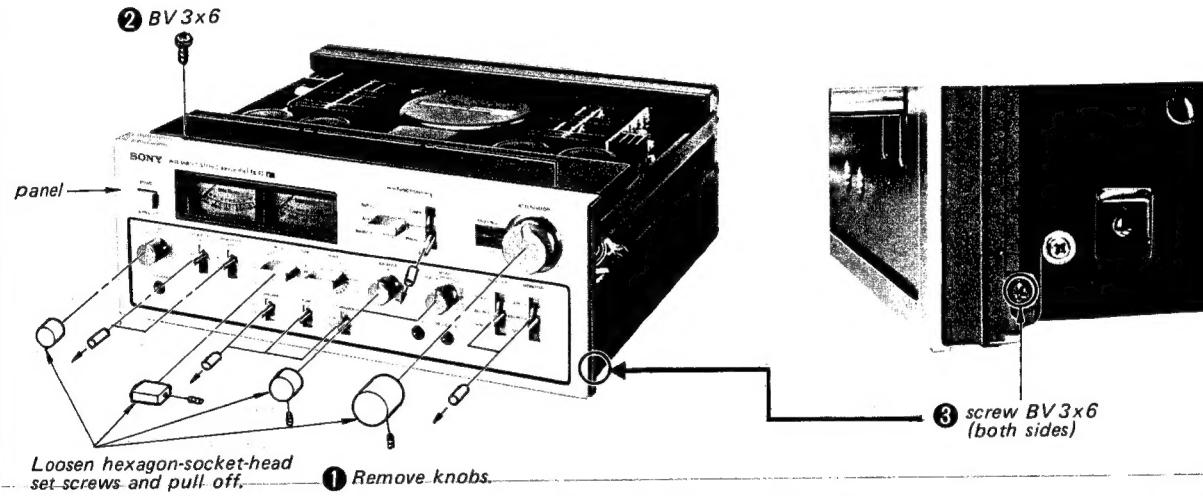
SECTION 2 DISASSEMBLY

Note: Remove in the numerical order.

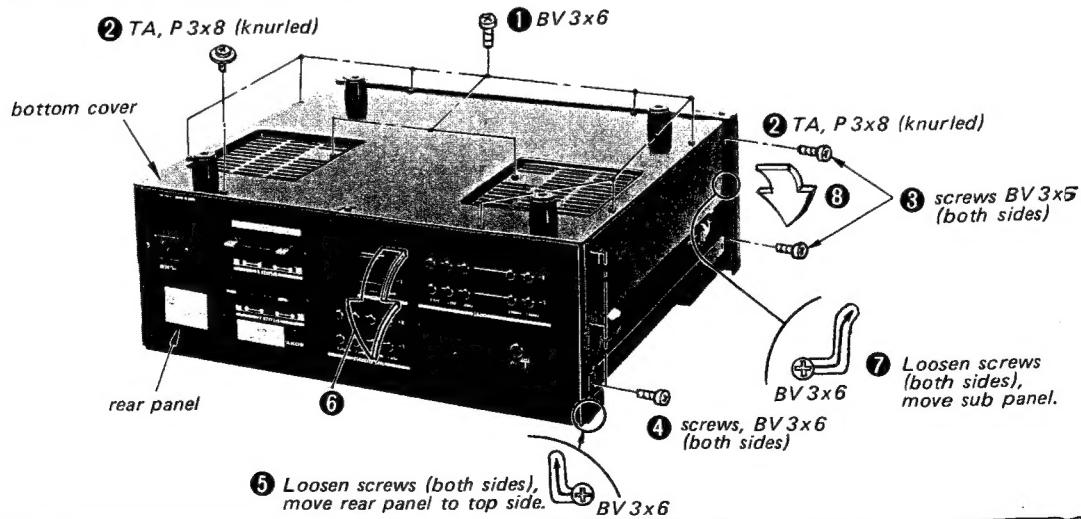
CASE REMOVAL

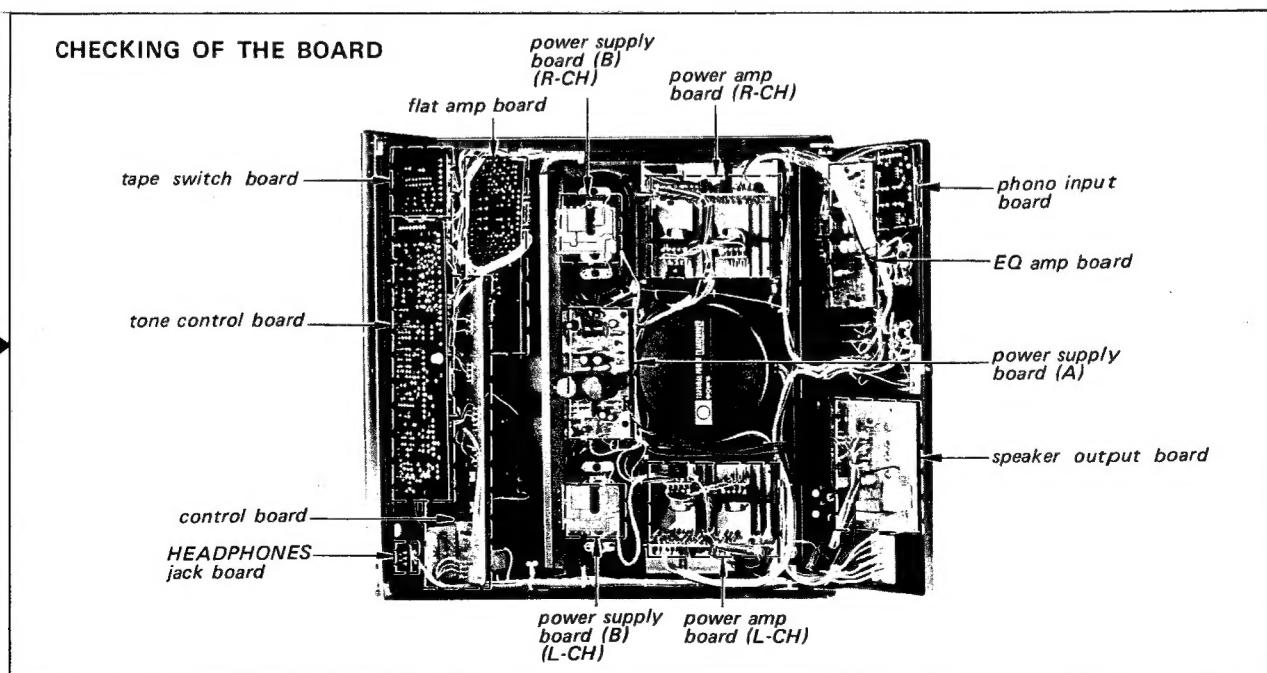
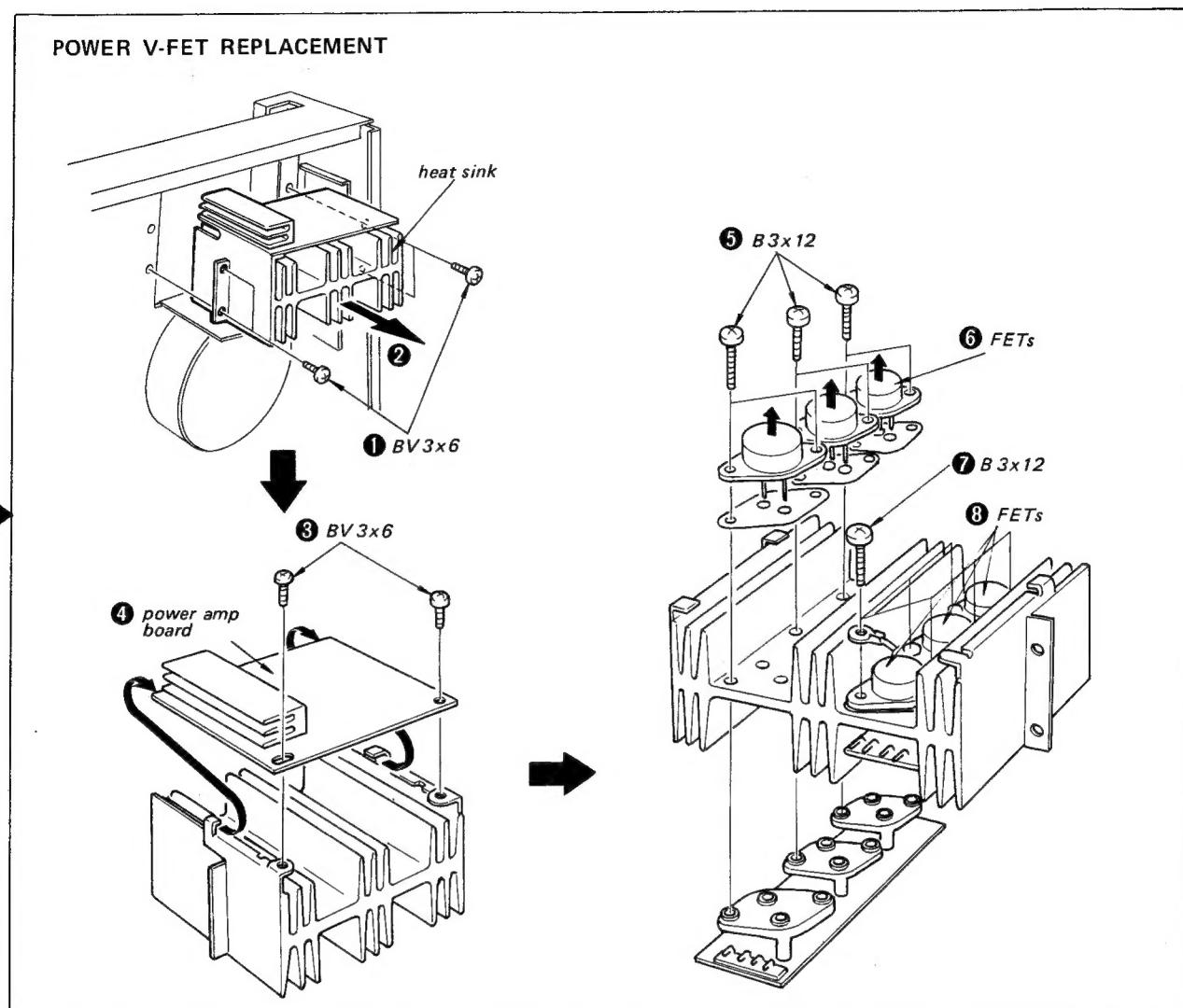


PANEL REMOVAL



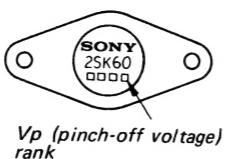
BOTTOM COVER REMOVAL AND PANEL OVERTURNING





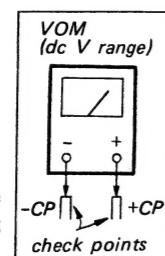
SECTION 3 ADJUSTMENT

Note: 1. As outlined in the circuit description, this set uses bipolar transistors and V-FETs in cascode circuit to maintain stable biasing. When replacing the three P-channel V-FETs 2SK60 and/or the three N-channel V-FETs 2SJ18 in each channel, use three matched ones which have the same V_p (pinch-off voltage)-rank figure printed on them as shown below. The fluctuation of the V_p rank of the three can be acceptable on one-rank-difference basis.



DC Balance Adjustment

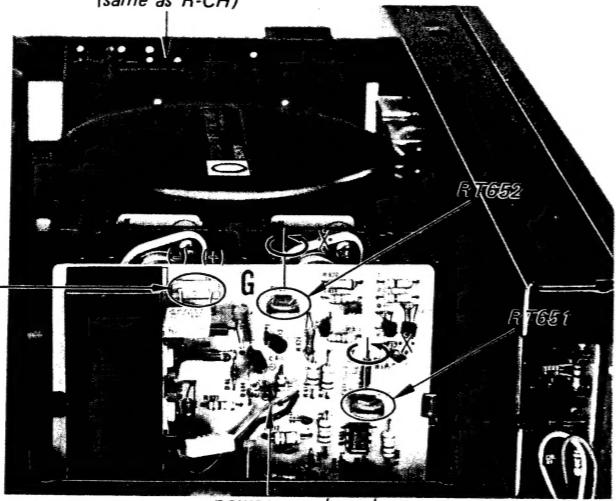
1. Connect a dc millivoltmeter to SPEAKER terminals.
2. Turn POWER switch ON. Adjust RT601 (L-CH) and RT651 (R-CH) for 0V reading on the millivoltmeter.



DC Bias Adjustment

1. Connect a VOM to the dc-bias check points.
2. With no input signal, adjust RT602 (L-CH) and RT652 (R-CH) for 12mV reading on VOM.

L-CH power amp board
(same as R-CH)



Note:

When the controls are turned in the arrowed direction \nearrow , voltage reading increases.

Same power-amp circuit boards are used in both L- and R-channels. Component reference numbers printed on the circuit board are different from the circuit and mounting diagrams.

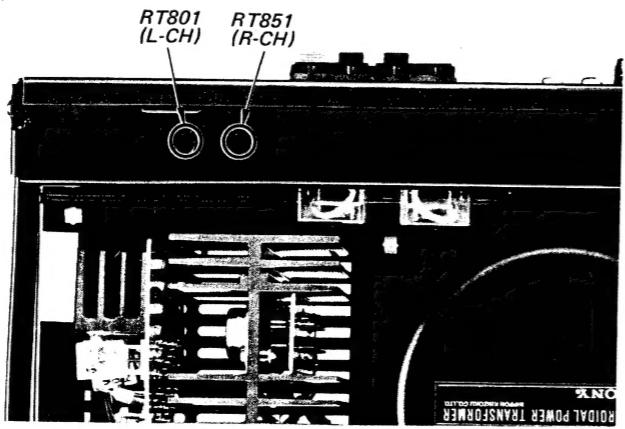
Power Meter Adjustment

Setting: ATTENUATOR control: maximum
HIGH FILTER switch: OFF
LOW FILTER switch: OFF
MONITOR switch: SOURCE
FUNCTION switch: TUNER

TONE controls: mechanical mid
BALANCE control: mechanical mid
MUTING switch: OFF

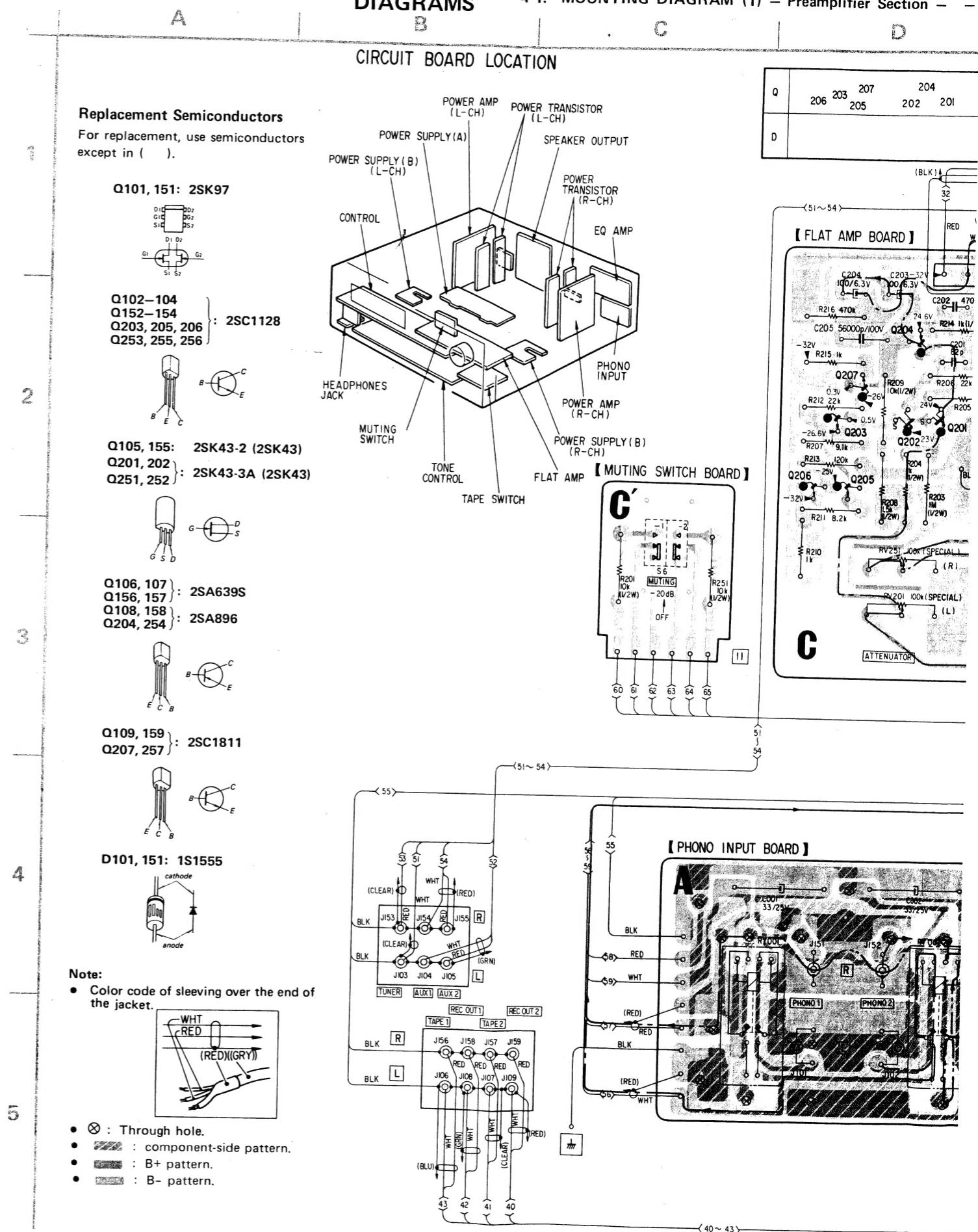
Procedure:

1. *af osc* attenuator $100\text{ k}\Omega$ $8\Omega (10\text{W})$ VTVM
2. Adjust attenuator for 8.9V (10W) reading on VTVM.
3. Adjust RT801 (L-CH) and RT851 (R-CH) so that power meters indicate 10W.



SECTION 4 DIAGRAMS

4-1. MOUNTING DIAGRAM (1) — Preamplifier Section —

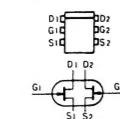


SECTION 4
DIAGRAMS

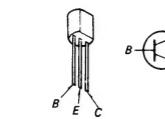
4-1. MOUNTING DIAGRAM (1) – Preamplifier Section – – Conductor Side –

Replacement Semiconductors
For replacement, use semiconductors
except in ().

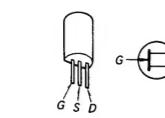
Q101, 151: 2SK97



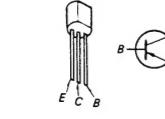
Q102–104
Q152–154
Q203, 205, 206
Q253, 255, 256



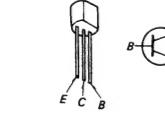
Q105, 155: 2SK43-2 (2SK43)
Q201, 202: 2SK43-3A (2SK43)
Q251, 252



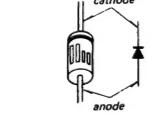
Q106, 107: 2SA639S
Q156, 157
Q108, 158: 2SA896
Q204, 254



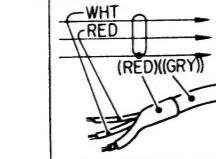
Q109, 159
Q207, 257



D101, 151: 1S1555

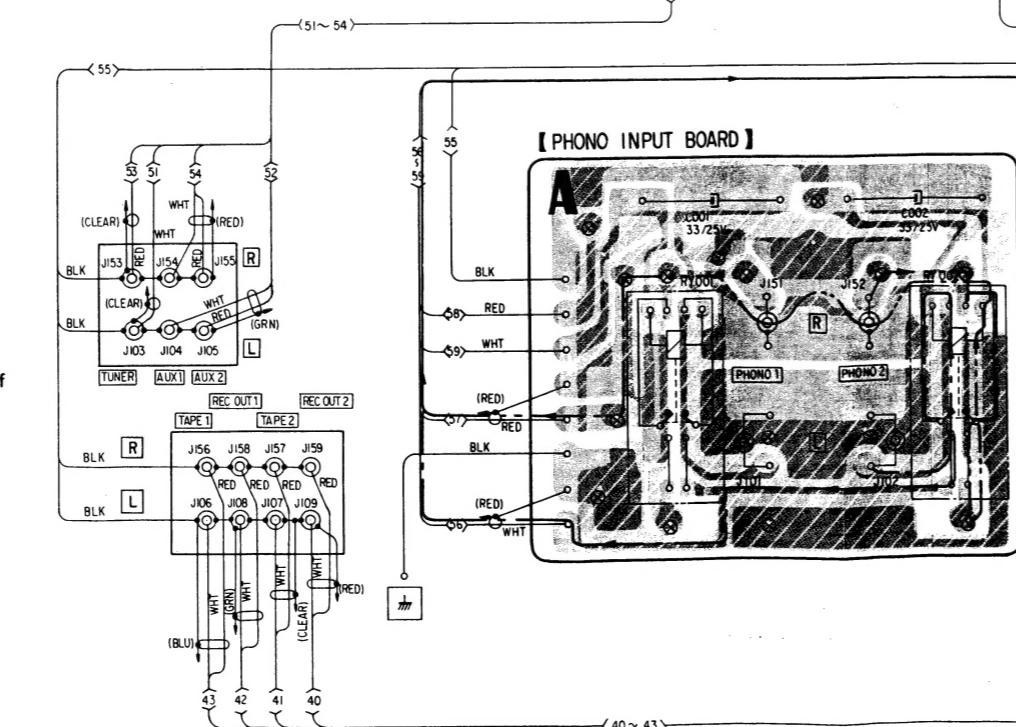
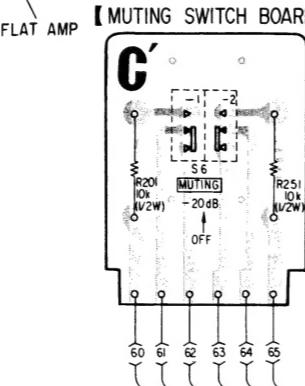
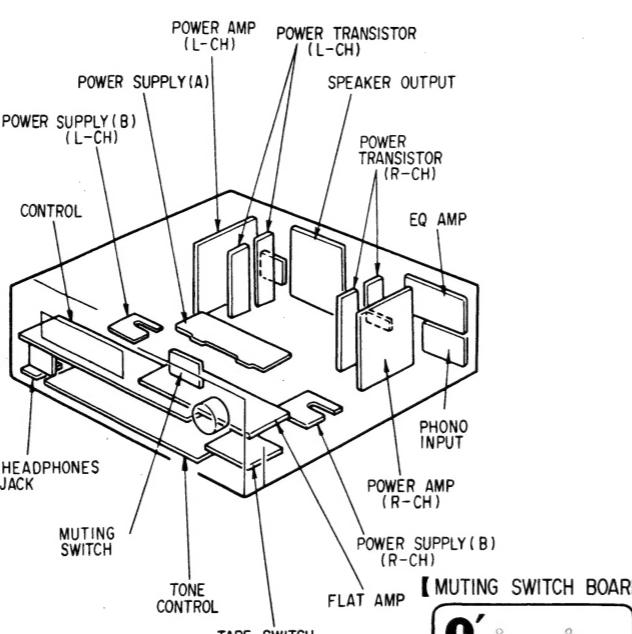


Note:
• Color code of sleeving over the end of
the jacket.

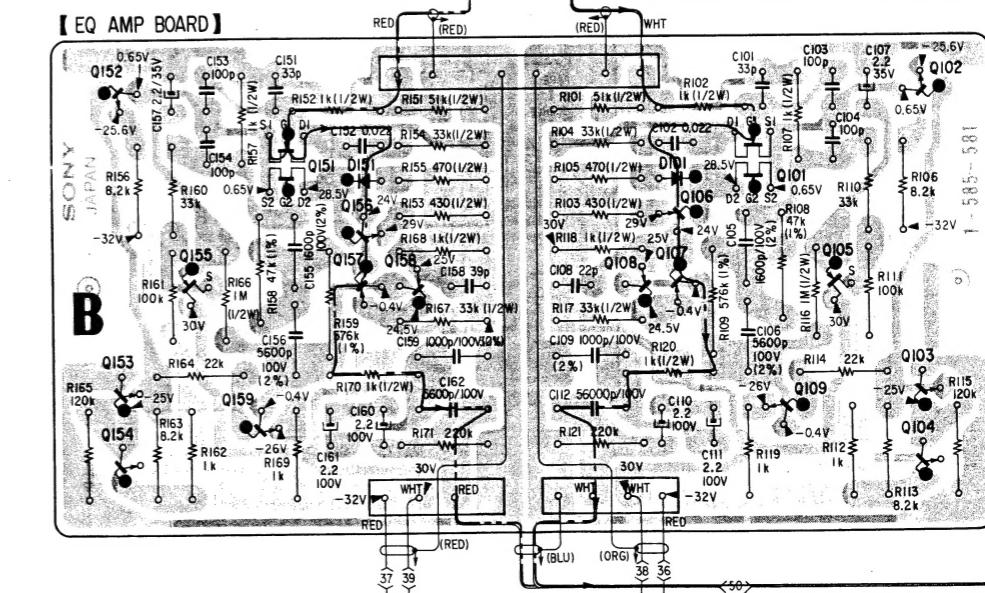
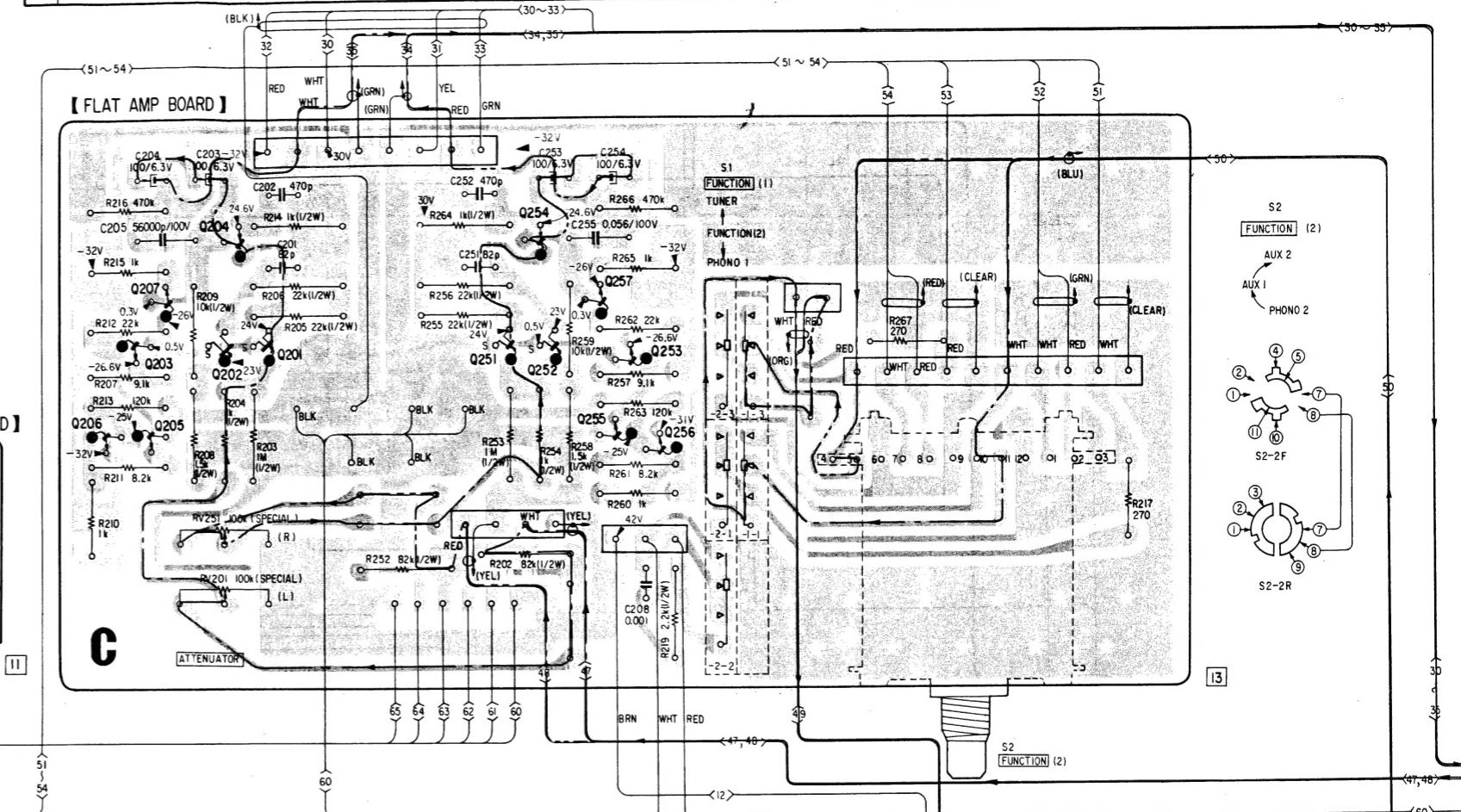


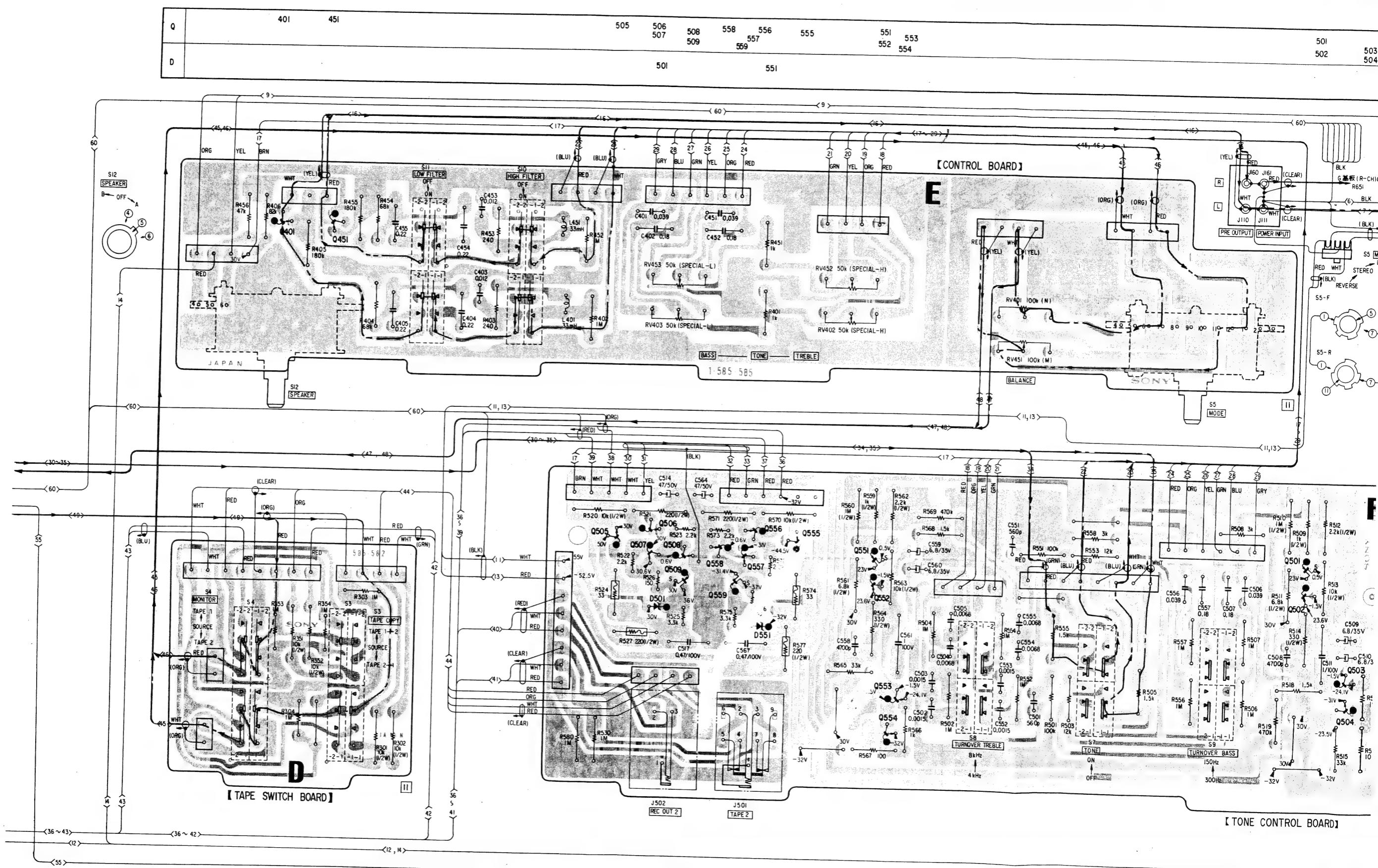
- ⊗ : Through hole.
- : component-side pattern.
- : B+ pattern.
- : B- pattern.

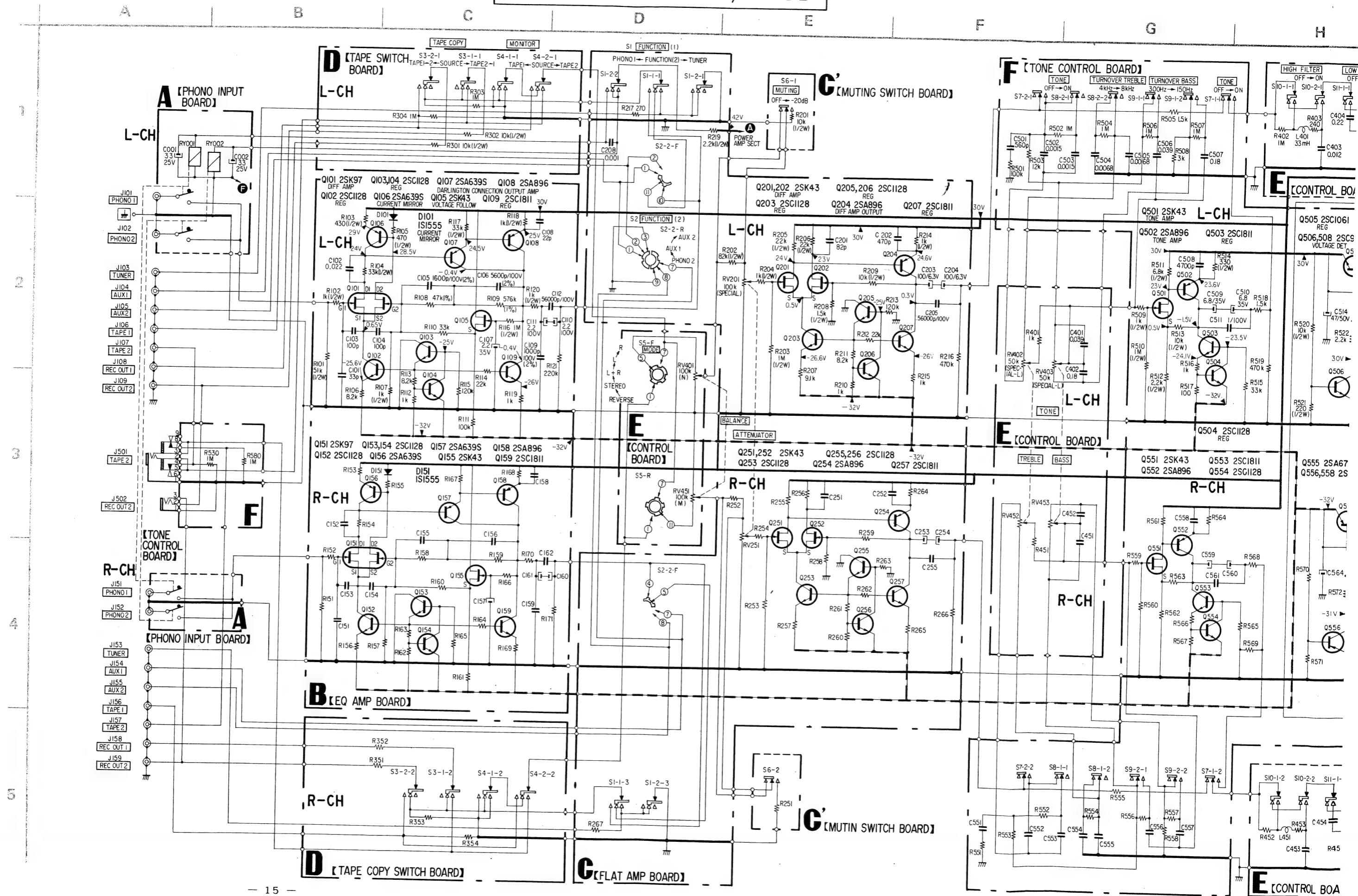
CIRCUIT BOARD LOCATION

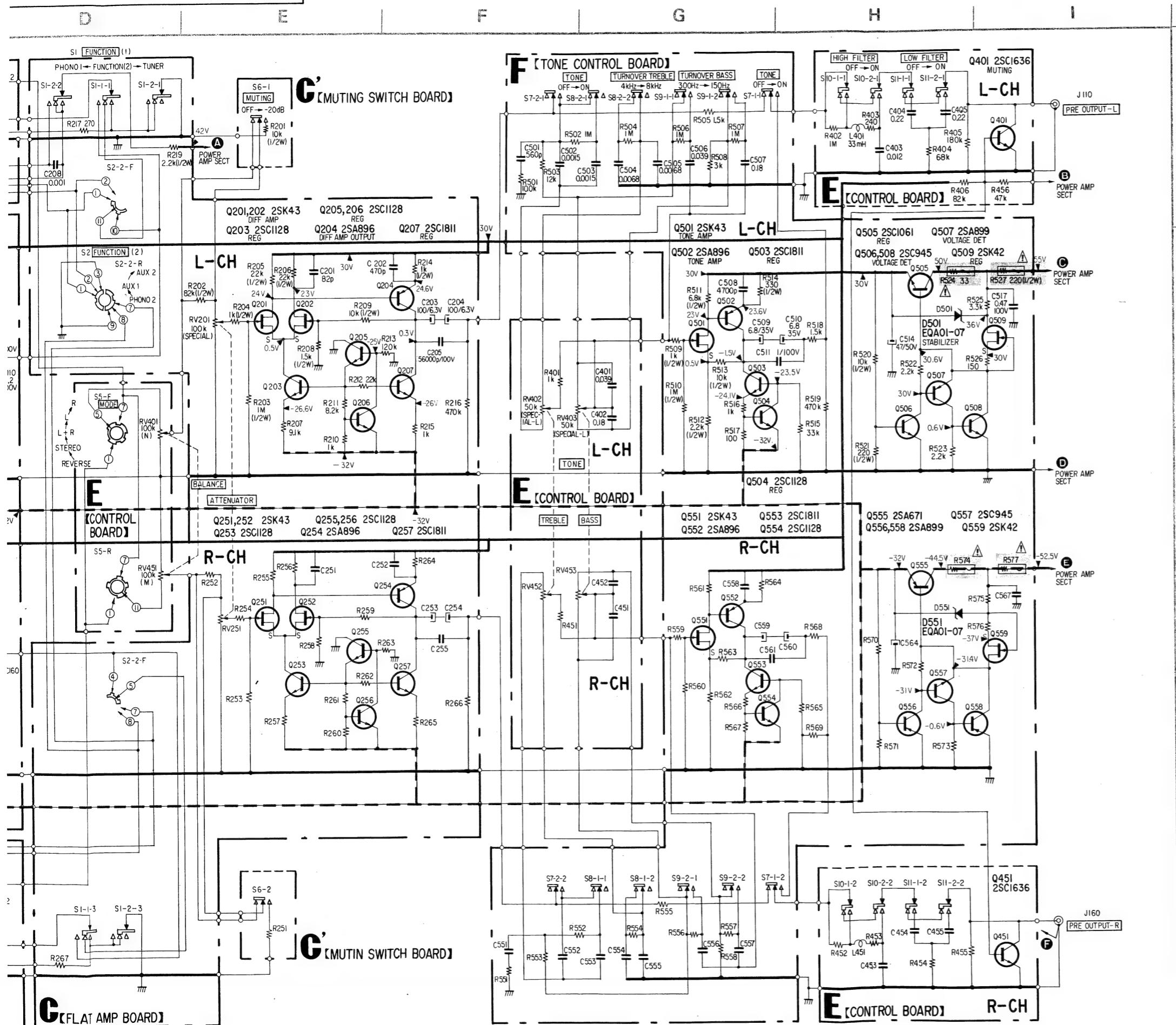


Q	206	203	207	204	152	153	155	151	156	108	106	101	109	105	102
D	205	202	201		154	155	159	157	158	107	108	103	104	101	









Note: The components identified by shading and mark are critical for safety. Replace only with part number specified.

Note:

- Components for right channel have same values as for left channel. Reference numbers are coded from.
- All capacitors are in μF unless otherwise noted. $\text{pF} = \mu\text{pF}$ 50WV or less are not indicated except for electrolytics.
- All resistors are in ohms, $\frac{1}{4}\text{W}$ unless otherwise noted. $\text{k}\Omega = 1000\Omega$, $\text{M}\Omega = 1000\text{k}\Omega$
- : fusible resistor.
- 0% indicates component tolerance.
- : B+ bus.
- : B- bus.
- : panel designation.
- Readings are taken under no signal conditions with a VOM (20 $\text{k}\Omega/\text{V}$).
- Switch

Ref. No.	Switch	Position
S1	FUNCTION (1)	FUNCTION (2)
S2	FUNCTION (2)	PHONO 2
S3	TAPE COPY	SOURCE
S4	MONITOR	SOURCE
S5	MODE	REVERSE
S6	MUTING	OFF
S7	TONE	OFF
S8	TOURNOVER TREBLE	4 kHz
S9	TOURNOVER BASS	300 Hz
S10	HIGH FILTER	OFF
S11	LOW FILTER	OFF

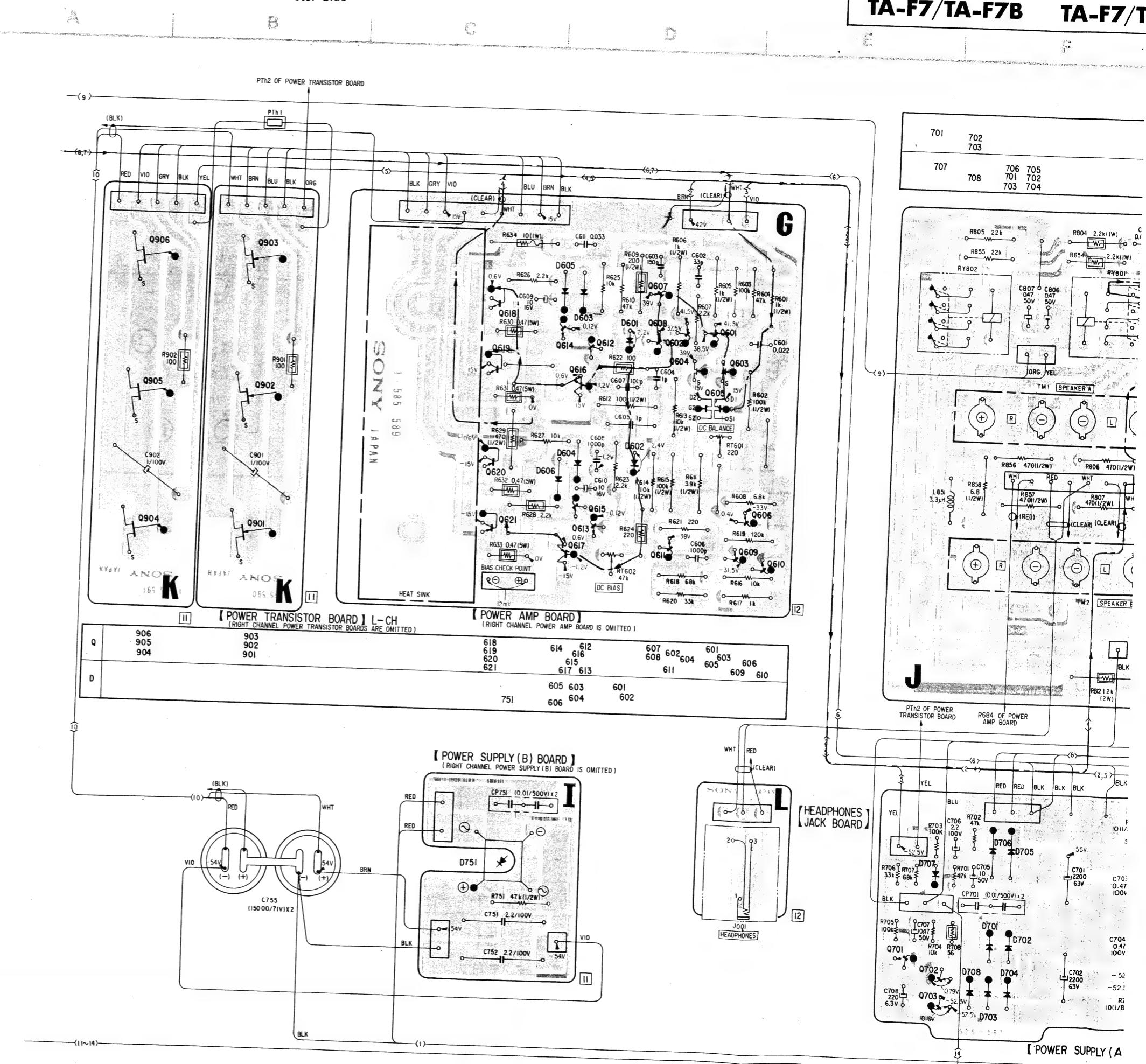
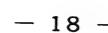
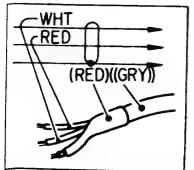
Replacement Semiconductors

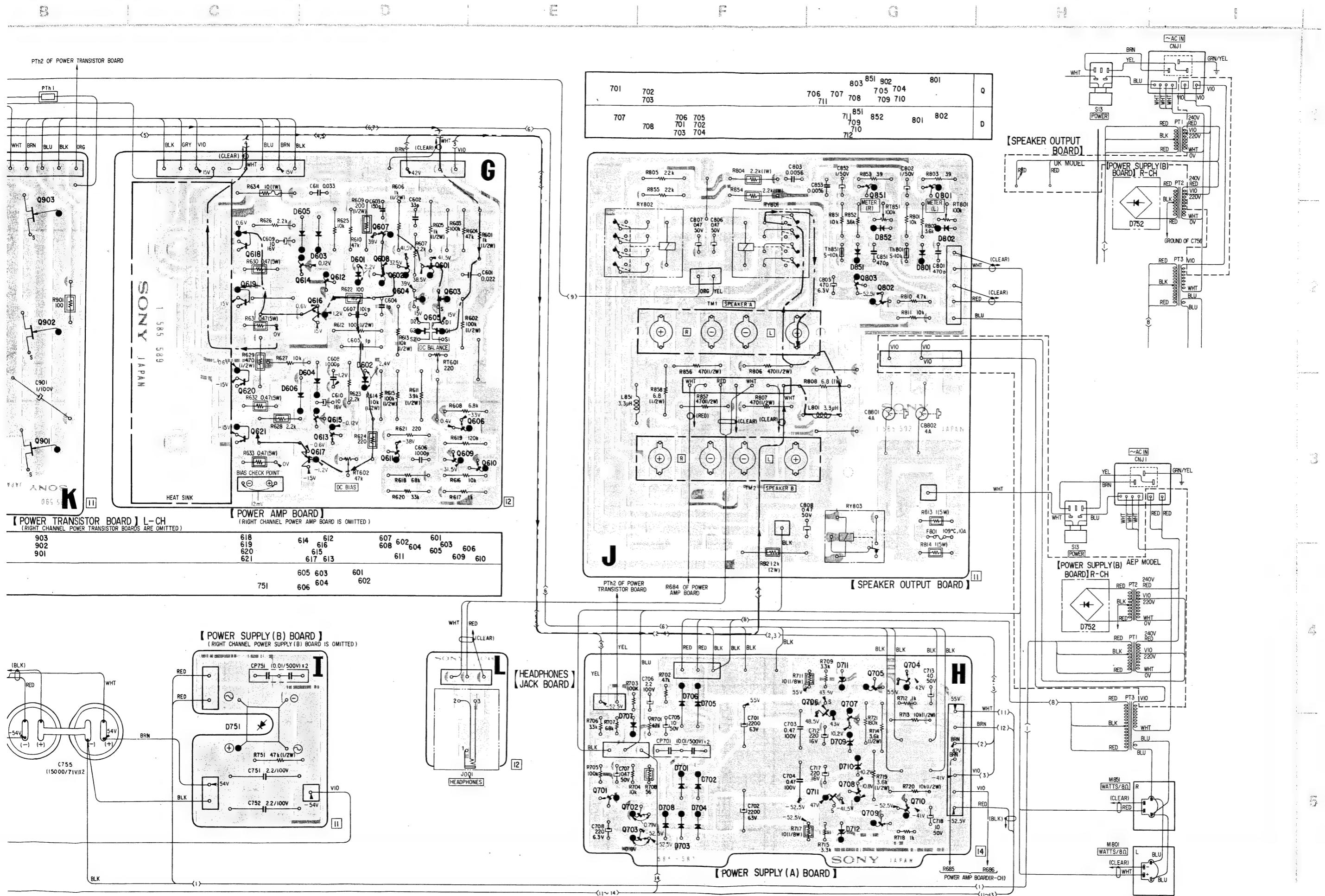
For replacement, use semiconductors except in ().

Q601, 602	Q613, 614	Q904-906
Q651, 652	Q663, 664	Q954-956
Q612, 615	Q701, 703	: 2SJ18
Q662, 665	Q801, 851	
Q702, 802		
Q803		
Q603, 604	Q616, 666: 2SC1124	
Q653, 654		
: 2SK30A-GR (2SK30A)		
Q605, 655: 2SK97	Q617, 667: 2SA706	D601, 651: (MV104V
		D601, 651: KB462S
Q606, 609	Q704: 2SC1061	
Q610, 656	Q618, 619	
: 2SC1128	: 2SC1173	
Q659, 660	Q668, 669	
Q607, 657: 2SA639S	Q710: 2SA671	D602, 652: SV04F
Q608, 658: 2SA896	Q620, 621 : 2SA473	
Q611, 661: 2SC1811	Q670, 671 : 2SA473	D603-606
		D653-656
		: 1S1555
Q705, 707: (2SC945)	Q706, 711: 2SK42-2 (2SK42)	D707
		D701-706: 10E2
		D708: 10E2 (10
Q901-903	Q708, 709: 2SA899	D801, 802
Q951-953		: 1T22A
: 2SC634A		
Q901-903		D709, 710: EQB01-112 (EQ
Q951-953		D711, 712: EQB01-07 (EQA
		D751, 752: S5VB

Note

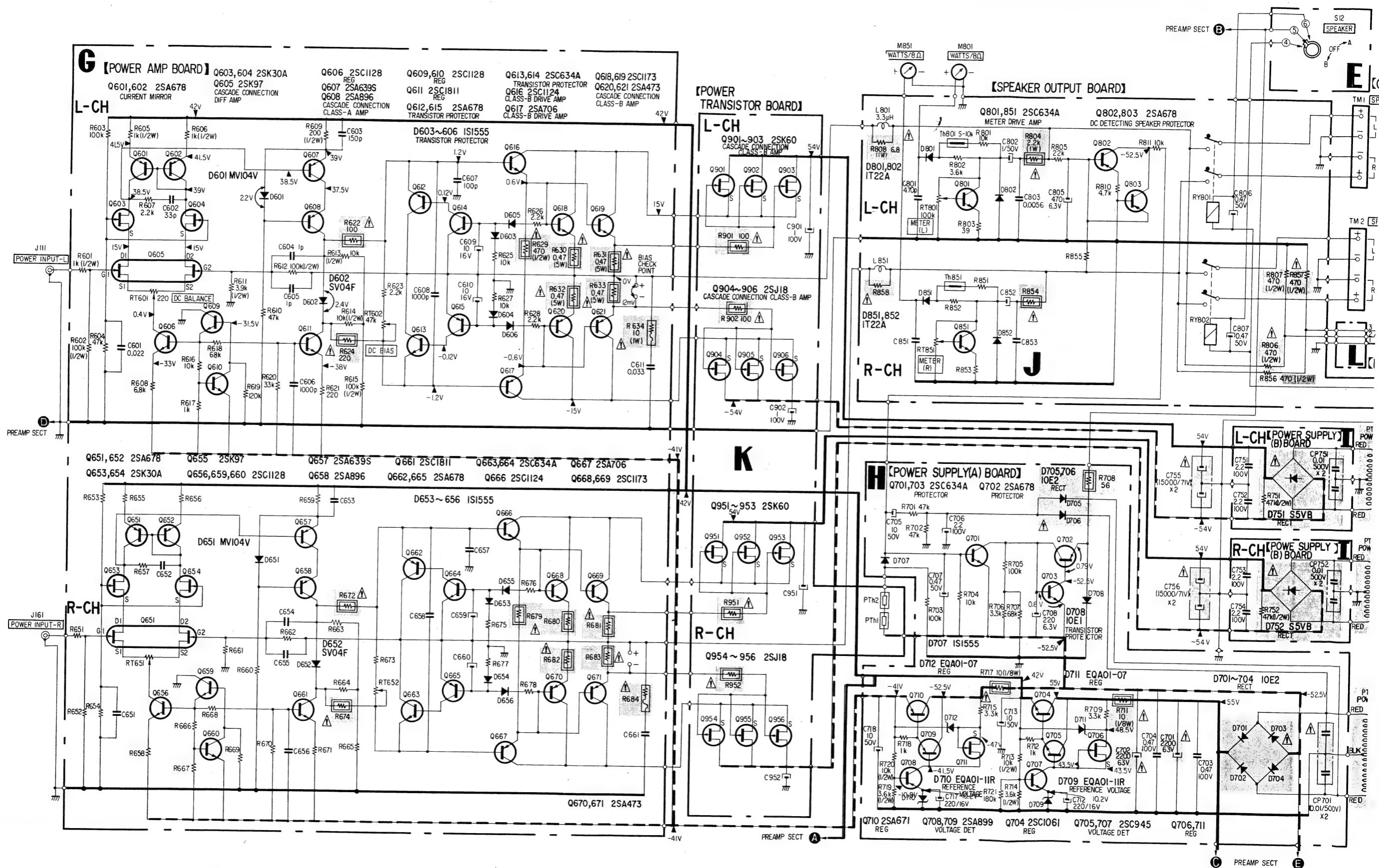
- Color code of sleeveing over the end of the jacket.
-  : B+ pattern
-  : B- Pattern

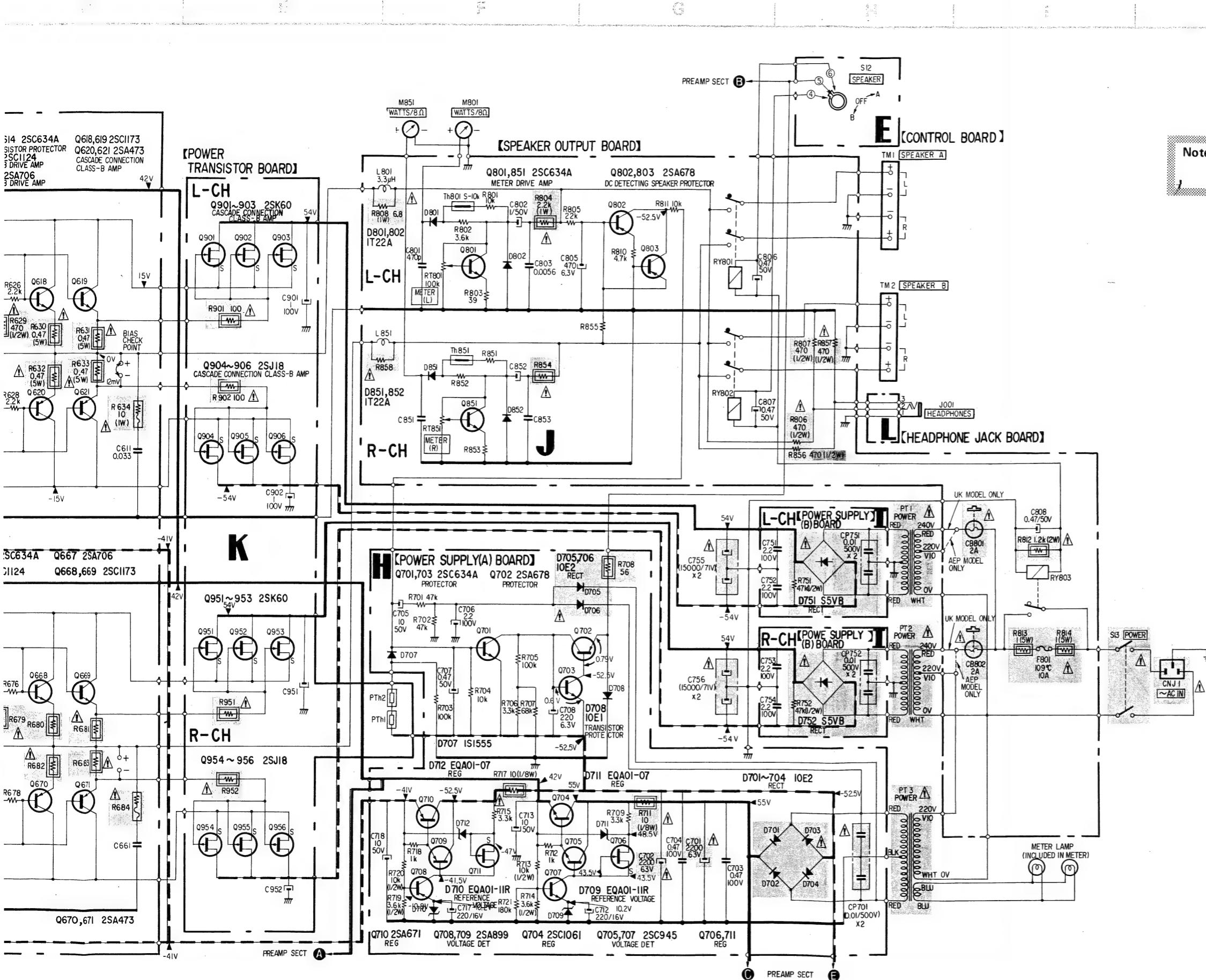




TA-F7/TA-F7B TA-F7/TA-F7B

4-5. SCHEMATIC DIAGRAM – Power Amplifier and Power Supply Sections –





Note: The components identified by shading and mark are critical for safety. Replace only with part number specified.

Note:

Components for right channel have same values as for left channel. Reference numbers are coded from. All capacitors are in μF unless otherwise noted. $\text{pF} = \mu\mu\text{F}$ WV or less are not indicated except for electrolytics. All resistors are in ohms, $\frac{1}{4}\text{W}$ unless otherwise noted.

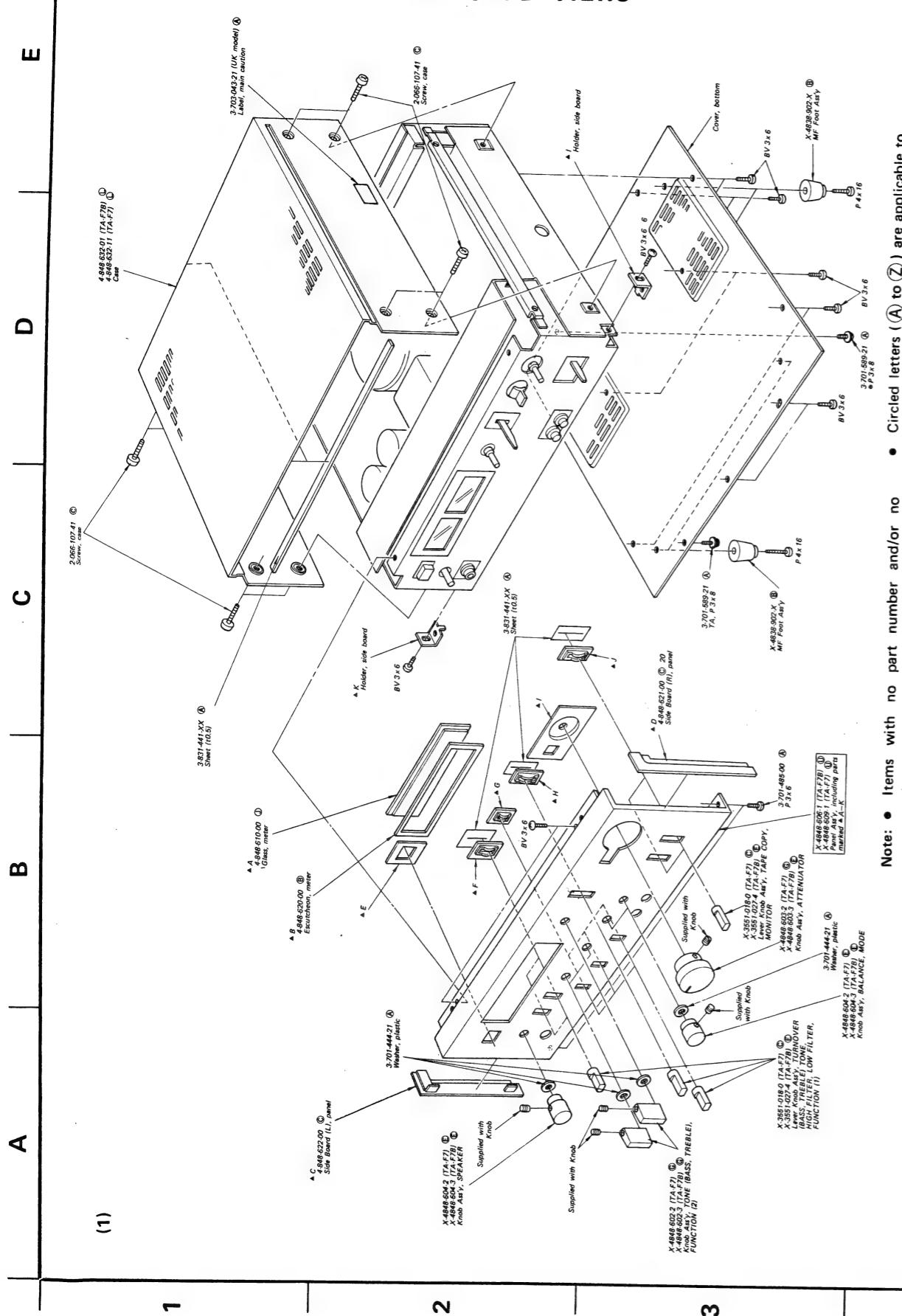
\square = 1000Ω , $\text{M}\Omega$ = $1000\text{ k}\Omega$

-  : nonflammable resistor.
-  : fusible resistor.
-  : B+ bus.
-  : B- bus.
-  : panel designation.
-  : adjustment for repair.

Readings are taken under no signal conditions with a DMM (20 $\text{k}\Omega/\text{V}$).
Switch

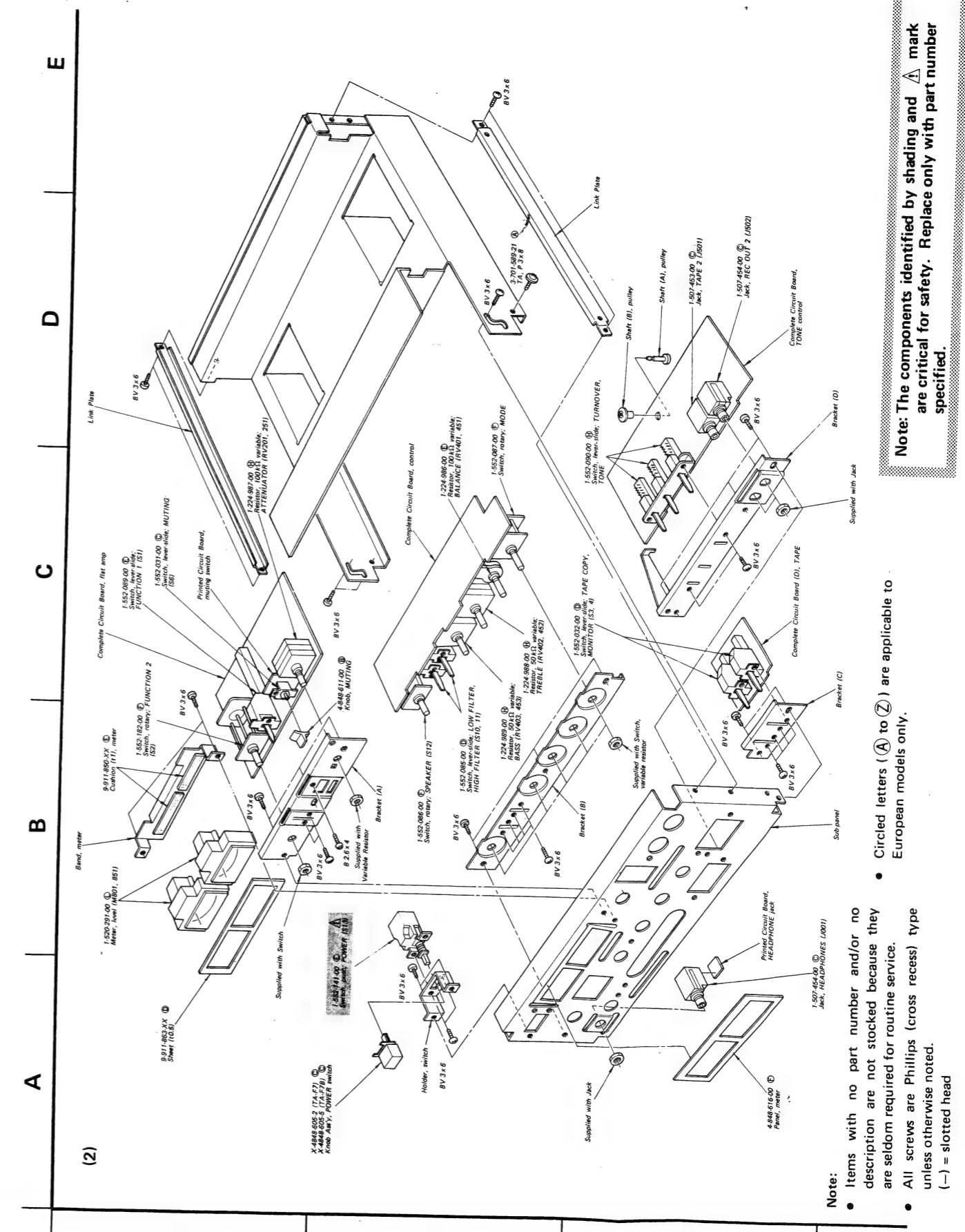
Ref. No.	Switch	Position
S12	SPEAKER	OFF
S13	POWER	OFF

SECTION 5 EXPLODED VIEWS



Note: • Items with no part number and/or no description are not stocked because they are seldom required for routine service.

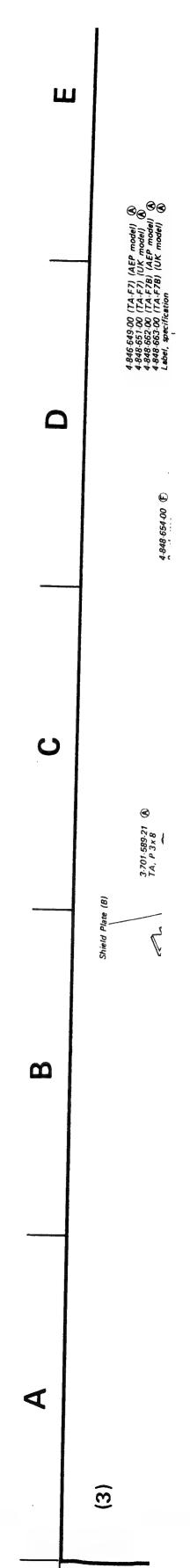
- All screws are Phillips (cross recess) type unless otherwise noted.
- Circled letters (**A** to **Z**) are applicable to European models only.



Note:

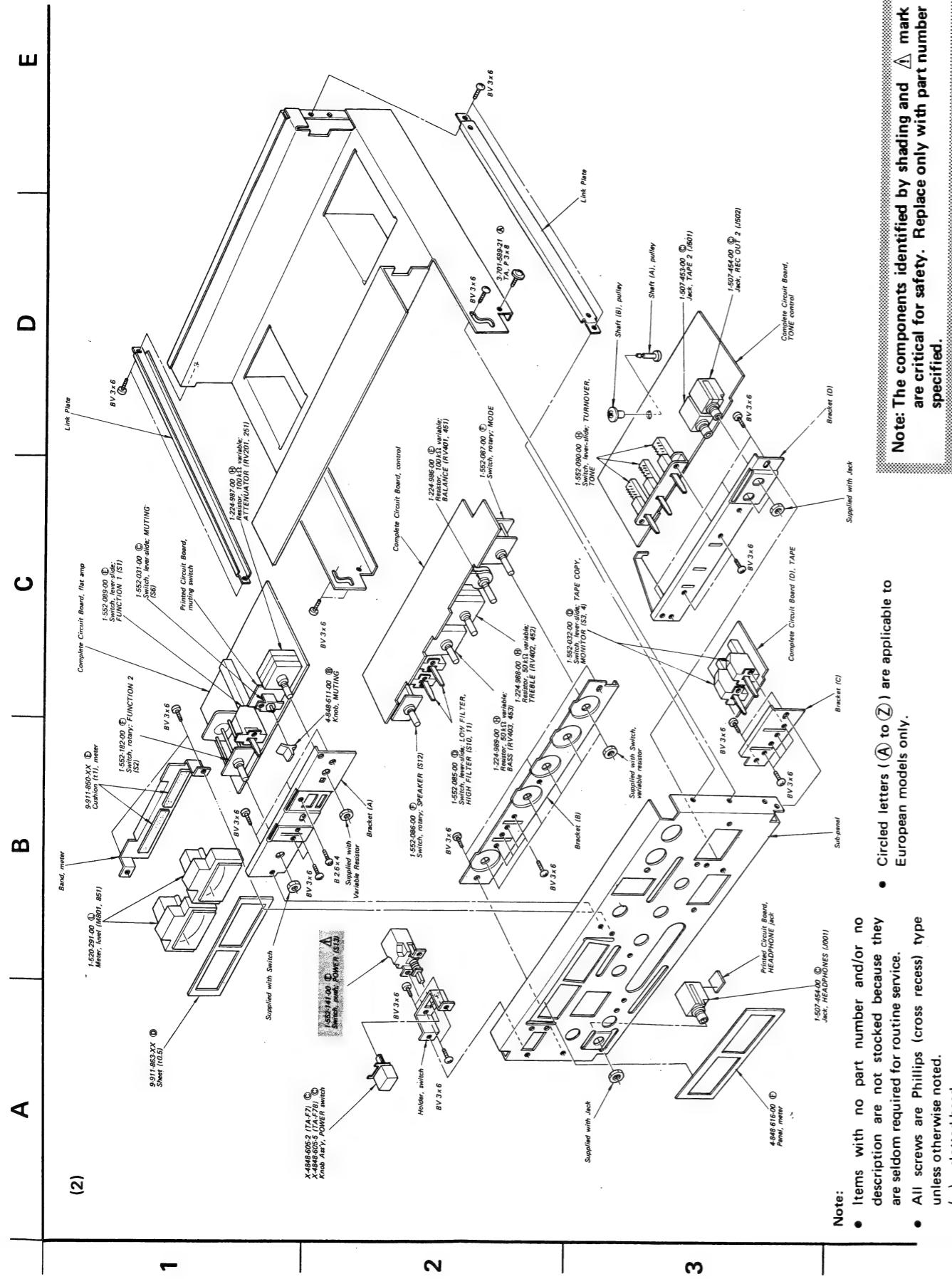
- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
(-) = slotted head

e: The components identified by shading and A mark are critical for safety. Replace only with part number specified

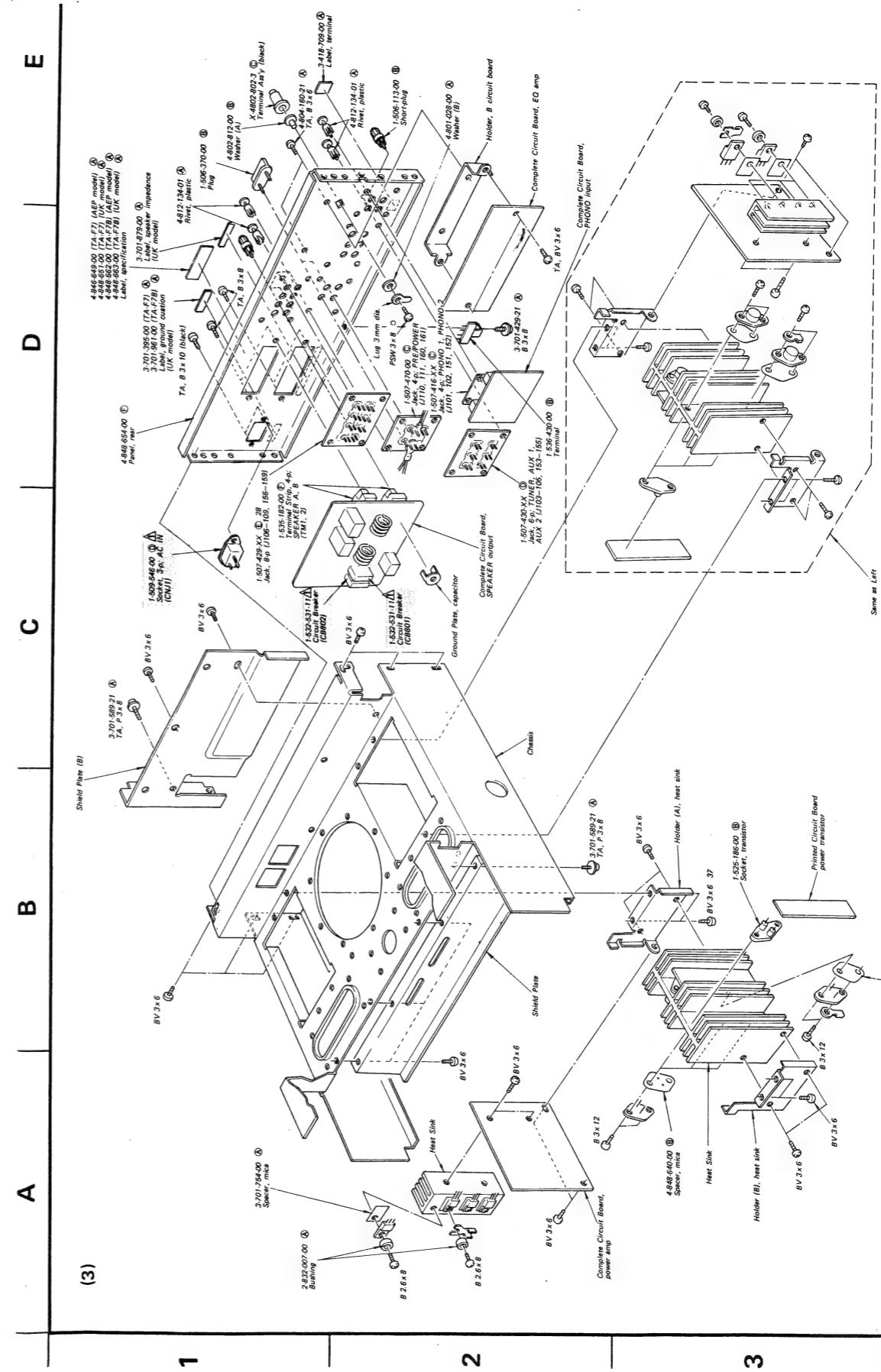


European models only.

4.846.649.00 (T4 F7) (AEP model)
 4.846.651.00 (T4 F7) (UK model)
 4.846.651.00 (T4 F7) (UK-E model)
 4.846.652.00 (T4 F7) (UK-E model)
 4.846.653.00 (T4 F7B) (UK-E model)
 Label: specification



Note: The components identified by shading and \triangle mark are critical for safety. Replace only with part number specified.



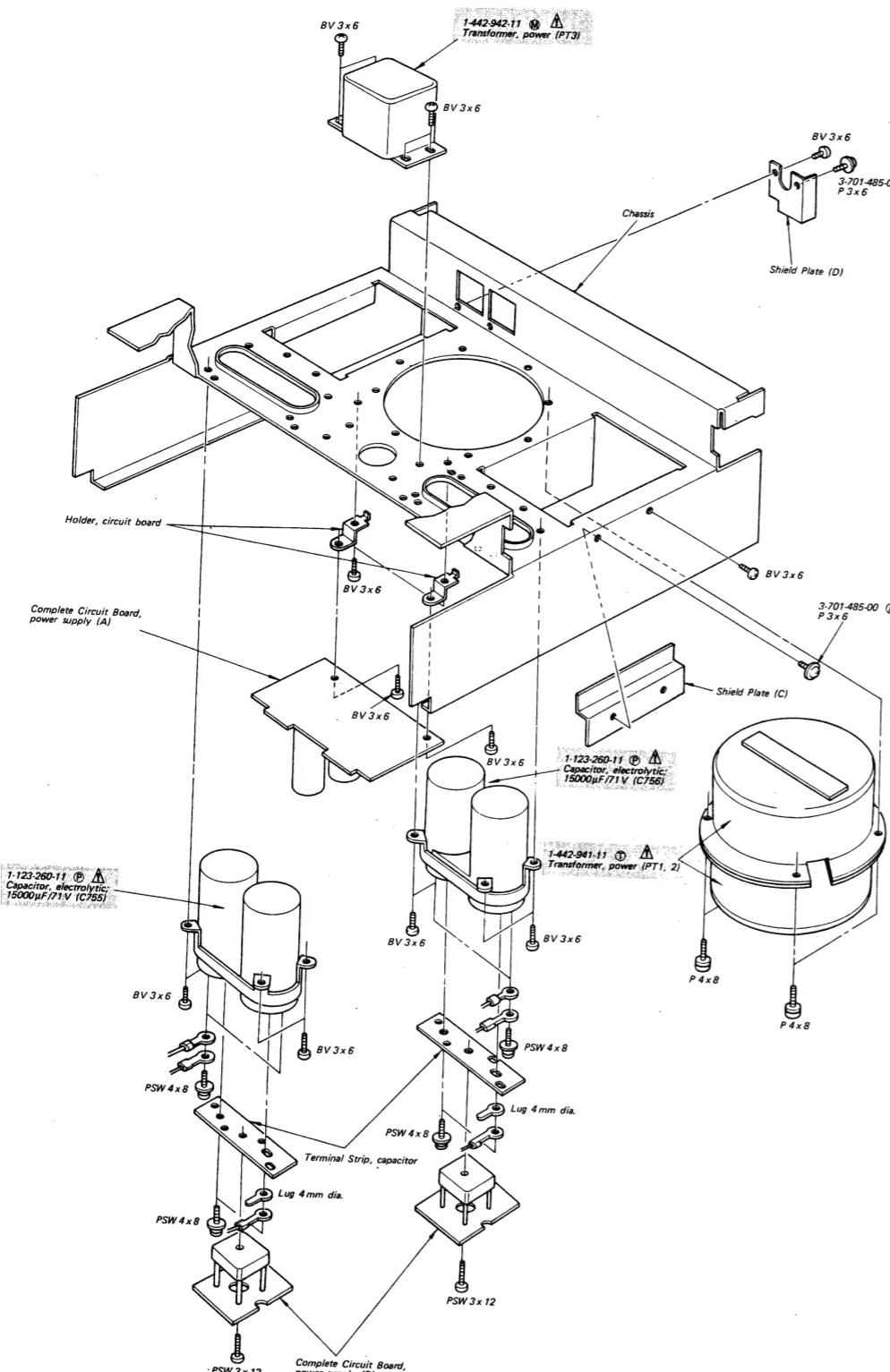
Note: The components identified by shading and \triangle mark are critical for safety. Replace only with part number specified.

• Circled letters (A to Z) are applicable to European models only.

• Items with no part number and/or no description are not stocked because they are seldom required for routine service.

• All screws are Phillips (cross recess) type unless otherwise noted.

A | B | C



Note:

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
(-) = slotted head
- Circled letters (Ⓐ to Ⓛ) are applicable to European models only.

Note: The components identified by shading and ⚠ mark are critical for safety. Replace only with part number specified.

SECTION 6 ELECTRICAL PARTS LIST

- Circled letters (Ⓐ to Ⓛ) are applicable to European models only.

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
PRINTED CIRCUIT BOARD					
	1-585-589-12 Ⓛ	Power Amp	⇒ Q603,604	2SK30A-GR	
SEMICONDUCTORS					
Transistors					
Q101,151	Ⓐ 2SK97		⇒ Q653,654	2SK97	
Q102-104	Ⓒ 2SC1128		Q605,655	2SC1128	
Q152-154	⇒ Q105,155		Q606,656	2SC1124	
	Ⓒ 2SK43-2		Q607,657	2SA639S	
⇒ Q106,107	Ⓒ 2SA639S		Q608,658	2SA896	
Q156,157			Q609,659	2SC1128	
Q108,158	Ⓒ 2SA896		Q610,660	2SC1811	
Q109,159	Ⓒ 2SC1811		Q611,661	2SA678	
Q201,202	Ⓐ 2SK43-3A		Q612,662	2SA678	
Q251,252	Ⓒ 2SC1128		Q613,663	2SC634A	
Q203,253	Ⓒ 2SA896		Q614,664	2SC1173	
Q204,254	Ⓒ 2SC1128		Q615,665	2SA678	
Q205,206	Ⓒ 2SC1128		Q616,666	2SC1124	
Q255,256	Ⓒ 2SC1811		Q617,667	2SA706	
Q207,257	Ⓒ 2SC1636		Q618,668	2SC1173	
Q401,451	Ⓐ 2SK43-3A		Q619,669	2SC1128	
⇒ Q501,551	Ⓒ 2SA896		Q620,670	2SA473	
Q502,552	Ⓒ 2SC1811		Q621,671	2SC1128	
Q503,553	Ⓒ 2SC1128		Q701	2SC634A	
Q504,554	Ⓒ 2SC1061		Q702	2SA678	
Q505	⇒ Q705		Q703	2SC634A	
Q555	Ⓐ 2SA671		Q704	2SC1061	
⇒ Q506	Ⓑ 2SC634A		⇒ Q706	2SK42-2	
Q556	Ⓒ 2SA899		Q707	2SC634A	
Q507	Ⓒ 2SA899		Q708,709	2SA899	
⇒ Q557	Ⓑ 2SC634A		Q710	Ⓐ 2SA671	
⇒ Q508	Ⓑ 2SC634A		⇒ Q711	Ⓒ 2SK42-2	
Q558	Ⓒ 2SA899		Q801,851	2SC634A	
⇒ Q509,559	Ⓒ 2SK42-2		Q802,803	2SA678	
Q601,602	Ⓒ 2SA678		Q901-903	2SK60	
Q651,652			Q951-953		
			Q904-906	2SJ18	
			Q954-956		
Diodes					
	D101,151				
	Ⓑ 1S1555				

- ⇒: Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

SECTION 6

ELECTRICAL PARTS LIST

• Circled letters (Ⓐ to Ⓛ) are applicable to European models only.

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description	Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
PRINTED CIRCUIT BOARD											
1-585-589-12	Ⓐ Power Amp		⇒ Q603,604	Ⓑ 2SK30A-GR		⇒ D501,551	Ⓑ EQB01-07		C102,152	1-101-005-11	Ⓐ 0.022
			⇒ Q653,654	Ⓕ 2SK97		⇒ D601,651	Ⓒ KB462S		C103,153	1-102-973-11	Ⓐ 100p
			Q605,655	Ⓒ 2SC1128		D602,652	Ⓒ SV04S		C104,154	1-130-131-11	Ⓑ 1600p 100V polyethylene
			Q606,656	Ⓒ 2SA639S		D603-606	Ⓑ 1S1555		C105,155	1-130-132-11	Ⓑ 5600p 100V polyethylene
			Q607,657			D653-656			C106,156		
SEMICONDUCTORS											
	Transistors			Q608,658	Ⓒ 2SA896	⇒ D701-706	Ⓐ 10E2		C107,157	1-131-217-11	Ⓑ 2.2 35V tantalum
	Q101,151	Ⓕ 2SK97	Q609,659	Ⓒ 2SC1128	Q610,660	D707	Ⓑ 1S1555		C108,158	1-102-959-11	Ⓐ 22p
Q102-104	Ⓒ 2SC1128		Q611,661	Ⓒ 2SC1811		⇒ D708	Ⓑ 10E2		C109,159	1-130-122-11	Ⓑ 1000p 100V polyethylene
Q152-154	Ⓒ 2SK43-2		Q612,662	Ⓒ 2SA678		⇒ D709,710	Ⓑ EQB01-11Z		C110,160	1-123-250-11	Ⓑ 2.2 100V elect
⇒ Q105,155	Ⓒ 2SA639S		Q613,663	Ⓑ 2SC634A		⇒ D711,712	Ⓑ EQB01-07		C111,161	1-130-133-11	Ⓑ 56000p 100V polyethylene
Q106,107			Q614,664			⇒ D751,752	Ⓐ 55VB20		C112,162		
Q156,157			Q615,665	Ⓒ 2SA678		D801,851			C201,251	1-102-971-11	Ⓐ 82p
Q108,158	Ⓒ 2SA896		Q616,666	Ⓒ 2SC1124		D802,852	Ⓑ 1T22M		C202,252	1-102-824-11	Ⓐ 470p
Q109,159	Ⓒ 2SC1811		Q617,667	Ⓓ 2SA706					C203,253	1-131-295-11	Ⓒ 100 6.3V tantalum
Q201,202	Ⓕ 2SK43-3A		Q618,668	Ⓒ 2SC1173					C204,254	1-130-133-11	Ⓑ 56000p 100V polyethylene
Q251,252			Q619,669						C205,255	1-108-227-12	Ⓐ 0.001 mylar
Q203,253	Ⓒ 2SC1128		Q620,670	Ⓒ 2SA473					C208		
Q204,254	Ⓒ 2SA896		Q621,671						C401,451	1-108-360-12	Ⓐ 0.039 mylar
Q205,206	Ⓒ 2SC1128		Q701	Ⓑ 2SC634A		TH801,851	1-800-202-XX	Ⓐ Thermistor, S-10K	C402,452	1-108-364-12	Ⓑ 0.18 mylar
Q255,256			Q702	Ⓒ 2SA678		PTh1,2	1-800-427-00	Ⓑ Thermistor	C403,453	1-108-581-12	Ⓑ 0.012 mylar
Q207,257	Ⓒ 2SC1811		Q703	Ⓑ 2SC634A					C404,454	1-108-254-12	Ⓑ 0.22 mylar
			Q704	Ⓓ 2SC1061					C405,455		
Q401,451	Ⓑ 2SC1636		⇒ Q705	Ⓑ 2SC634A		L401,451	1-407-879-00	Ⓑ 33 mH, microinductor	C501,551	1-102-115-11	Ⓐ 560p
⇒ Q501,551	Ⓕ 2SK43-3A		⇒ Q706	Ⓒ 2SK42-2		L801,851	1-420-879-00	Ⓑ Coil	C502,552	1-108-228-12	Ⓐ 0.0015 mylar
Q502,552	Ⓒ 2SA896		Q707	Ⓑ 2SC634A				C503,553			
Q503,553	Ⓒ 2SC1811		Q708,709	Ⓒ 2SA899				C504,554	1-108-237-12	Ⓐ 0.0068 mylar	
Q504,554	Ⓒ 2SC1128		Q710	Ⓔ 2SA671				C505,555			
Q505	Ⓓ 2SC1061		⇒ Q711	Ⓒ 2SK42-2				C506,556	1-108-360-12	Ⓐ 0.039 mylar	
Q555	Ⓔ 2SA671		Q801,851	Ⓑ 2SC634A		PT1,2	Ⓐ 1-442-941-11	Ⓣ Power	C507,557	1-108-364-12	Ⓑ 0.18
⇒ Q506	Ⓑ 2SC634A		Q802,803	Ⓒ 2SA678		PT3	Ⓐ 1-442-942-11	Ⓜ Power	C508,558	1-102-125-11	Ⓐ 4700p
Q556	Ⓒ 2SA899							C509,559	1-131-239-11	Ⓑ 6.8 35V tantalum	
Q557	Ⓒ 2SA899		Q901-903	Ⓡ 2SK60				C510,560			
⇒ Q557	Ⓑ 2SC634A		Q951-953					C511,561	1-130-083-11	Ⓒ 1 100V polyethylene	
⇒ Q508	Ⓑ 2SC634A		Q904-906	Ⓡ 2SJ18				C514,564	1-121-411-11	Ⓑ 47 50V elect	
Q558	Ⓒ 2SA899		Q954-956					C517,567	1-130-086-11	Ⓑ 0.47 100V polyethylene	
⇒ Q509,559	Ⓒ 2SK42-2							C601,651	1-101-005-11	Ⓐ 0.022	
Q601,602								C602,652	1-102-963-11	Ⓐ 33p	
Q651,652	Ⓒ 2SA678		D101,151	Ⓑ 1S1555				C603,653	1-101-361-11	Ⓐ 150p	
								C604,654	1-102-934-11	Ⓐ 1p	
								C605,655			

• ⇒: Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

⇒: Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

Note: The components identified by shading and Ⓛ mark are critical for safety. Replace only with part number specified.

Note: Circled letters (Ⓐ to Ⓡ) are applicable to European models only.

Ref. No.	Part No.	Description
C606,656	1-101-001-11	Ⓐ 1000p
C607,657	1-102-973-11	Ⓐ 100p
C608,658	1-101-001-11	Ⓐ 1000p
C609,659	1-121-651-11	Ⓐ 10 16V elect
C610,660	1-108-244-12	Ⓐ 0.033 mylar
C701,702 Ⓢ	1-123-261-11	Ⓔ 2200 63V elect
C703,704	1-130-086-11	Ⓑ 0.47 100V polyethylene
C705	1-123-183-11	Ⓐ 10 50V elect
C706	1-123-250-11	Ⓑ 2.2 100V elect
C707	1-121-726-11	Ⓐ 0.47 50V elect
C708	1-121-419-11	Ⓑ 220 6.3V elect
C712,717	1-121-421-11	Ⓑ 220 16V elect
C713,718	1-121-738-11	Ⓑ 10 50V elect
C751-754	1-130-084-11	Ⓓ 2.2 100V polyethylene
C755,756 Ⓢ	1-123-260-11	Ⓟ 15000 71V elect
C801,851	1-102-824-11	Ⓐ 470p
C802,852	1-121-391-11	Ⓐ 1 50V elect
C803,853	1-108-355-12	Ⓐ 0.0056 mylar
C805	1-121-424-11	Ⓑ 470 6.3V elect
C806-808	1-121-726-11	Ⓐ 0.47 50V elect
C901,951	1-119-372-11	1 100V elect
C902,952		

RESISTORS

All resistors are in ohms. Common ¼W carbon resistors are omitted.

Check schematic diagram for values.

R101,151	1-244-914-11	Ⓐ 51k ½W
R102,152	1-244-873-11	Ⓐ 1k ½W
R103,153	1-244-864-11	Ⓐ 430 ½W
R104,154	1-244-909-11	Ⓐ 33k ½W
R105,155	1-244-865-11	Ⓐ 470 ½W
R107,157	1-244-873-11	Ⓐ 1k ½W
R108,158	1-214-172-11	Ⓑ 47k ¼W metal oxide
R109,159	1-214-473-11	Ⓑ 576k ½W metal oxide
R116,166	1-244-945-11	Ⓐ 1M ½W
R117,167	1-244-909-11	Ⓐ 33k ½W
R118,168	1-244-873-11	Ⓐ 1k ½W

Note: The components identified by shading and Ⓢ mark are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description
R120,170	1-244-873-11	Ⓐ 1k ½W
R202,252	1-244-919-11	Ⓐ 2k ½W
R203,253	1-244-945-11	Ⓐ 1M ½W
R204,254	1-244-873-11	Ⓐ 1k ½W
R205,255	1-244-905-11	Ⓐ 22k ½W
R206,256	1-244-881-11	Ⓐ 2.2k ½W
R208,258	1-244-877-11	Ⓐ 1.5k ½W
R209,259	1-244-897-11	Ⓐ 10k ½W
R214,264	1-244-873-11	Ⓐ 1k ½W
R219	1-244-881-11	Ⓐ 2.2k ½W
R301,351	1-244-897-11	Ⓐ 10k ½W
R302,352	1-244-897-11	Ⓐ 10k ½W
R509,559	1-244-873-11	Ⓐ 1k ½W
R510,560	1-244-945-11	Ⓐ 1M ½W
R511,561	1-244-893-11	Ⓐ 6.8k ½W
R512,562	1-244-881-11	Ⓐ 2.2k ½W
R513,563	1-244-897-11	Ⓐ 10k ½W
R514,564	1-244-861-11	Ⓐ 330 ½W
R520,570	1-244-897-11	Ⓐ 10k ½W
R521,571	1-244-856-11	Ⓐ 200 ½W
R524,574 Ⓢ	1-212-869-11	Ⓐ 33 ¼W fusible
R527,577 Ⓢ	1-212-990-11	Ⓐ 220 ½W fusible

R601,651	1-244-873-11	Ⓐ 1k ½W
R602,652	1-244-921-11	Ⓐ 100k ½W
R605,655	1-244-873-11	Ⓐ 1k ½W
R606,656	1-244-887-11	Ⓐ 3.9k ½W
R611,661	1-244-921-11	Ⓐ 100k ½W
R612,662	1-244-921-11	Ⓐ 100k ½W
R613,663	1-244-897-11	Ⓐ 10k ½W
R614,664	1-244-897-11	Ⓐ 10k ½W
R615,665	1-244-921-11	Ⓐ 100k ½W
R622,672 Ⓢ	1-211-522-11	Ⓐ 100 ¼W
R624,674 Ⓢ	1-211-530-11	Ⓐ 220 ¼W
R629,679 Ⓢ	1-211-630-11	Ⓐ 470 ½W
R630-633	1-217-158-11	Ⓐ 0.47 5W metal oxide
R634,684 Ⓢ	1-217-481-11	Ⓑ 10 1W fusible
R708	Ⓐ 1-211-516-11	Ⓐ 56 ¼W

Note: Circled letters (Ⓐ to Ⓡ) are applicable to European models only.

Note: Circled letters (Ⓐ to Ⓡ) are applicable to European models only.

Ref. No.	Part No.	Description
R711,717 Ⓢ	1-211-409-11	Ⓐ 10 ½W
R713,720	1-244-897-11	Ⓐ 10k ½W
R714,719	1-244-886-11	Ⓐ 3.6k ½W
R751,752 Ⓢ	1-244-913-11	Ⓐ 47k ½W
R804,854 Ⓢ	1-213-147-11	Ⓐ 2.2k 1W metal oxide
R806,856 Ⓢ	1-244-865-11	Ⓐ 470 ½W
R807,857 Ⓢ	1-212-370-11	Ⓐ 6.8 1W
R812	1-206-666-11	Ⓐ 1.2k 2W metal oxide
R813,814 Ⓢ	1-217-160-11	Ⓐ 1 5W metal oxide
R901,951 Ⓢ	1-211-522-11	Ⓐ 100 ¼W
R902,952 Ⓢ	1-224-487-00	Ⓑ 220 adjustable
RT601,651	1-224-661-00	Ⓑ 47k adjustable
RT801,851	1-224-492-00	Ⓑ 100k adjustable
RV201,251	2-224-987-00	Ⓗ 100k, variable; ATTENUATOR
RV401,451	1-224-986-00	Ⓔ 100k, variable; BALANCE
RV402,452	1-224-988-00	Ⓗ 50k, variable; TREBLE
RV403,453	1-224-989-00	Ⓗ 51k, variable; BASS

SWITCHES

S1	1-552-089-00	Ⓔ Lever Slide, FUNCTION (1)
S2	1-552-182-00	Ⓕ Rotary Slide, FUNCTION (2)
S3,4	1-552-032-00	Ⓓ Lever Slide, TAPE COPY, MONITOR
S5	1-552-087-00	Ⓕ Rotary, MODE
S6	1-552-031-00	Ⓒ Lever Slide, MUTING
S7-9	1-552-090-00	Ⓗ Lever Slide, TURNOVER (BASS, TREBLE)/TONE
S10,11	1-552-085-00	Ⓓ Lever Slide, LOW FILTER, HIGH FILTER
S12	1-552-086-00	Ⓕ Rotary, SPEAKER
S13	1-552-141-00	Ⓔ Pushbutton, POWER

JACKS

J001	1-507-454-00	Ⓒ HEADPHONES
J101,151	1-507-416-XX	Ⓒ 4p, PHONO 1, PHONO 2
J102,152	1-507-430-XX	Ⓓ 6p, TUNER, AUX 1, AUX 2
J103-105	1-507-430-XX	Ⓓ 6p, TUNER, AUX 1, AUX 2
J153-155	1-507-430-XX	Ⓓ 6p, TUNER, AUX 1, AUX 2

Note: The components identified by shading and Ⓢ mark are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description
J106-109	1-507-429-XX	Ⓔ 8p, TAPE 1, TAPE 2
J156-159		REC OUT 1, REC OUT 2
J110,160	1-507-470-00	Ⓒ 4p, PRE/POWER
J111,161		
J501	1-507-453-00	Ⓒ TAPE 2
J502	1-507-454-00	Ⓒ REC OUT 2
CNJ	1-509-546-00	Ⓓ 3p, socket; AC IN

MISCELLANEOUS

CB801,802 Ⓢ</td

Note: Circled letters (Ⓐ to Ⓛ) are applicable to European models only.

TA-F7/TA-F7B TA-F7/TA-F7B

HARDWARE NOMENCLATURE

Ref. No. Part No. Description

R711,717	Ⓐ1-211-409-11	Ⓐ 10	1/8W
R713,720	1-244-897-11	Ⓐ 10 k	1/2W
R714,719	1-244-886-11	Ⓐ 3.6 k	1/2W
R751,752	Ⓐ1-244-913-11	Ⓐ 47 k	1/2W
R804,854	Ⓐ1-213-147-11	Ⓐ 2.2 k	1W metal oxide
R806,856	Ⓐ1-244-865-11	Ⓐ 470	1/2W
R807,857	Ⓐ1-212-370-11	Ⓐ 6.8	1W
R812	Ⓐ1-206-666-11	Ⓐ 1.2 k	2W metal oxide
R813,814	Ⓐ1-217-160-11	Ⓐ 1	5W metal oxide

R901,951 Ⓛ1-211-522-11 Ⓛ 100 1/4W

RT601,651	1-224-487-00	Ⓑ 220	adjustable
RT602,652	1-224-661-00	Ⓑ 47 k	adjustable
RT801,851	1-224-492-00	Ⓑ 100 k	adjustable
RV201,251	2-224-987-00	Ⓗ 100 k, variable; ATTENUATOR	
RV401,451	1-224-986-00	Ⓔ 100 k, variable; BALANCE	
RV402,452	1-224-988-00	Ⓗ 50 k, variable; TREBLE	
RV403,453	1-224-989-00	Ⓗ 51 k, variable; BASS	

SWITCHES

S1	1-552-089-00	Ⓔ Lever Slide, FUNCTION (1)
S2	1-552-182-00	Ⓕ Rotary Slide, FUNCTION (2)
S3,4	1-552-032-00	Ⓓ Lever Slide, TAPE COPY, MONITOR
S5	1-552-087-00	Ⓕ Rotary, MODE
S6	1-552-031-00	Ⓒ Lever Slide, MUTING
S7-9	1-552-090-00	Ⓗ Lever Slide, TURNOVER (BASS, TREBLE)/TONE
S10,11	1-552-085-00	Ⓓ Lever Slide, LOW FILTER, HIGH FILTER
S12	1-552-086-00	Ⓕ Rotary, SPEAKER
S13	Ⓐ1-552-141-00	Ⓔ Pushbutton, POWER
		JACKS
J001	1-507-454-00	Ⓒ HEADPHONES
J101,151	1-507-416-XX	Ⓒ 4p, PHONO 1, PHONO 2
J102,152	1-507-430-XX	Ⓓ 6p, TUNER, AUX 1, AUX 2
J103-105	1-507-430-XX	Ⓓ 6p, TUNER, AUX 1, AUX 2
J153-155	1-507-430-XX	Ⓓ 6p, TUNER, AUX 1, AUX 2

Note: The components identified by shading and Ⓛ mark are critical for safety. Replace only with part number specified.

Ref. No. Part No. Description

J106-109	1-507-429-XX	Ⓔ 8p, TAPE 1, TAPE 2
J156-159	1-507-470-00	Ⓒ 4p, PRE/POWER
J111,161	1-507-453-00	Ⓒ TAPE 2
J501	1-507-454-00	Ⓒ REC OUT 2
CNJ	Ⓐ1-509-546-00	Ⓓ 3p, socket; AC IN

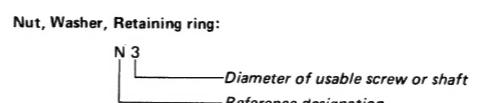
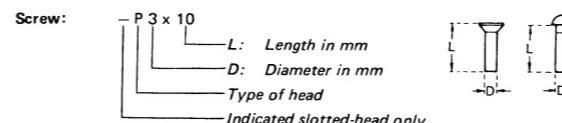
MISCELLANEOUS

CB801,802	Ⓐ1-532-531-11	Ⓒ Circuit Breaker, 2A
CP701	Ⓐ1-102-355-11	Ⓑ Encapsulated Component
CP751,752	1-515-257-00	Ⓗ Relay (TA-F7)
F801	1-515-293-00	Ⓗ Relay (TA-F7B)
RY001,002	1-515-277-00	Ⓕ Relay
RY801,802	1-515-278-00	Ⓕ Relay
TM1,2	1-535-182-00	Ⓕ Terminal Strip, 4p; SPEAKER A, B

SWITCHES

1-506-370-00	Ⓑ Plug
1-525-186-00	Ⓑ Socket, transistor
1-536-430-12	Ⓑ Terminal Strip

ACCESSORIES & PACKING MATERIALS	
Part No.	Description
1-506-113-00	Ⓑ Short Plug
1-534-819-12	Ⓖ Cord, power (UK model)
3-701-020-00	Ⓐ Bag, SS check sheet
3-701-622-00	Ⓐ Bag, plastic (UK model)
3-770-394-11	Ⓛ Manual, instruction
4-848-648-00	Ⓑ Bag, protection
4-848-659-00	Ⓗ Carton (TA-F7)
4-848-664-00	Ⓗ Carton (TA-F7B)
4-848-660-00	Ⓓ Frame
4-848-661-00	Ⓒ Cushion, lower
4-848-658-00	Ⓒ Cushion, upper



Reference Designation	Shape	Description	Remarks
SELF-TAPPING SCREWS			
TA		self-tapping screw	ex: TA, P 3 x 10
PTP		pan-head self-tapping screw	binding-head self-tapping (TA, B) screw for replacement
PTPWH		pan-head self-tapping screw with washer face	binding-head self-tapping (TA, B) screw and flat washer for replacement
PTTWH		pan-head thread-rolling screw with washer face	binding-head (B) screw and flat washer for replacement
SET SCREWS			
SC		set screw	
SC		hexagon-socket set screw	ex: SC 2.6 x 4, hexagon socket
NUT			
N		nut	
WASHERS			
W		flat washer	
SW		spring washer	
LW		internal-tooth lock washer	ex: LW3, internal
LW		external-tooth lock washer	ex: LW3, external
RETAINING RINGS			
E		retaining ring	
G		grip-type retaining ring	

1/4 WATT CARBON RESISTORS Ⓛ

Note: Circled letter Ⓛ is applicable to European model only.

Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.
1.0	1-244-601-11	10	1-244-625-11	100	1-244-649-11	1.0k	1-244-673-11	10k	1-244-697-11	100k	1-244-721-11
1.1	1-244-602-11	11	1-244-626-11	110	1-244-650-11	1.1k	1-244-674-11	11k	1-244-698-11	110k	1-244-722-11
1.2	1-244-603-11	12	1-244-627-11	120	1-244-651-11	1.2k	1-244-675-11	12k	1-244-699-11	120k	1-244-723-11
1.3	1-244-604-11	13	1-244-628-11	130	1-244-652-11	1.3k	1-244-676-11	13k	1-244-700-11	130k	1-244-724-11
1.5	1-244-605-11	15	1-244-629-11	150	1-244-653-11	1.5k	1-244-677-11	15k	1-244-701-11	150k	1-244-725-11
1.6	1-244-606-11	16	1-244-630-11	160	1-244-654-11	1.6k	1-244-678-11	16k	1-244-702-11	160k	1-244-726-11
1.8	1-244-607-11	18	1-244-631-11	180	1-244-655-11	1.8k	1-244-679-11	18k	1-244-703-11	180k	1-244-737-11
2.0	1-244-608-11	20	1-244-632-11	200	1-244-656-11	2.0k	1-244-680-11	20k	1-244-704-11	200k	1-244-728-11